

# *The* SOUTHERN ECONOMIC JOURNAL

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## ARTICLES

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AND THE UNIVERSITY OF NORTH CAROLINA

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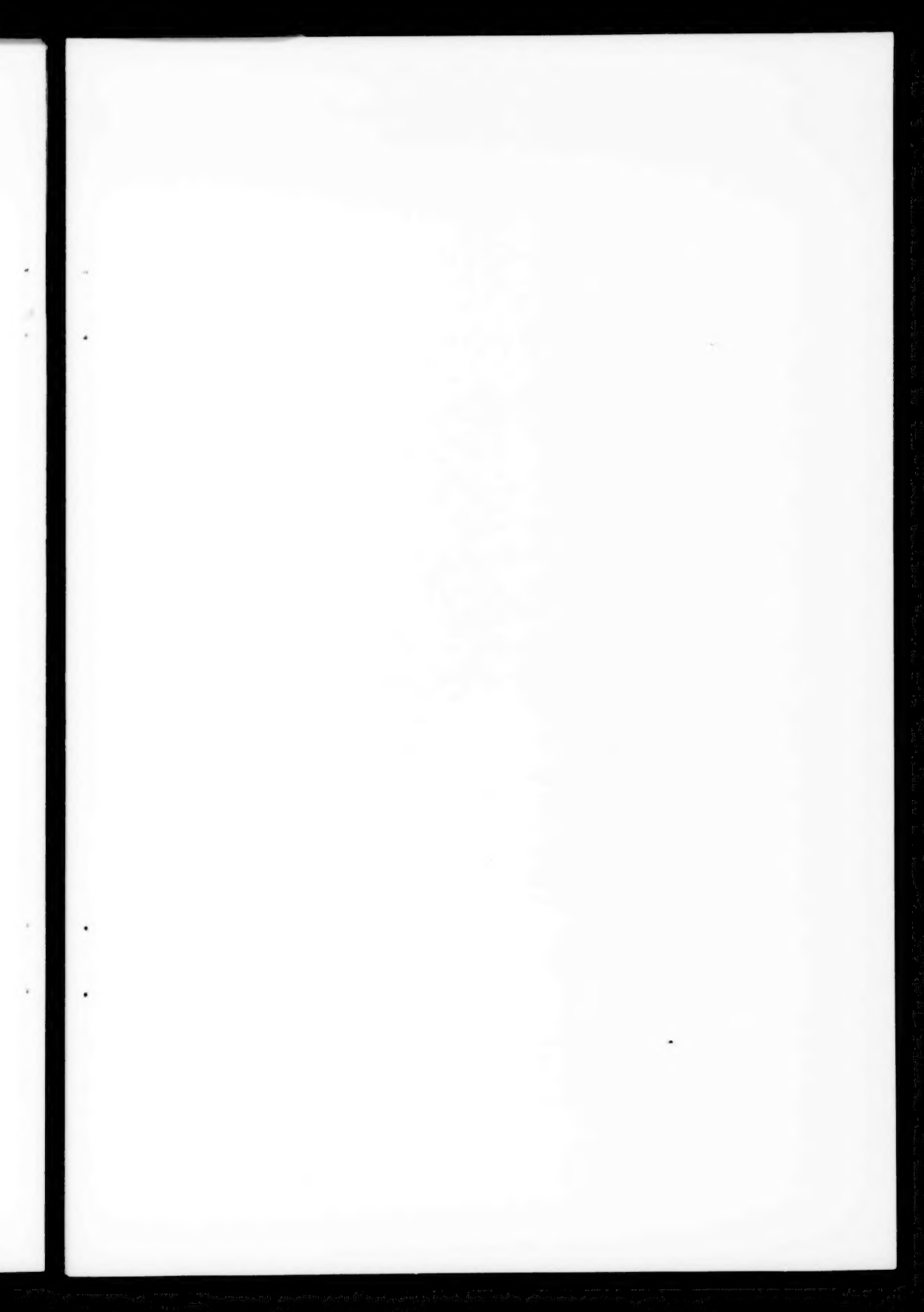
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# The SOUTHERN ECONOMIC JOURNAL

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## FREEDOM, ECONOMICS, AND CORPORATE ORGANIZATION\*

MILTON S. HEATH

*University of North Carolina*

It is my intention to review some of the relationships in economic literature between policy, theory, and history and then to attempt some applications of this broad approach to current developments. This combination of what might be designated respectively normative, positive, and historical economics is an approach that has characterized English economic thought from Adam Smith to John Maynard Keynes. I think that this has resulted from the strong empirical tradition in English thought and the immediate origins of English economics in moral philosophy and the Industrial Revolution.

This fusion of policy, theory, and history has been looked upon increasingly as a confusion of tasks and purposes and, consequently, has tended to go out of style. Today most of us limit our efforts either to theory or to history or possibly to normative studies; or more likely we restrict our attention to an even narrower segment of one of these fields, such as econometrics, economic growth, or monetary policy; and not infrequently these tasks are even further divided. Within such narrow confines, we are able to work on high levels of abstraction, with rigorous tools of deduction and inference, and to obtain neat, precise answers which carry a convincing air. Sometimes one is tempted to ask who is convinced. Attempts to integrate the efforts in our various specialisms have not yielded very satisfying results to date. I think that it has been the strength of the English economists that they have steered a middle course between overspecialization on the one hand and over-generalization on the other.

There were far better economic theorists in his times than Adam Smith; nor could he be considered an accomplished historian, even by the crude standards of historical writing then practiced; but he developed a body of theory, based upon the emerging economic organization of his period and directed to the primary policy questions then current, that has never since quite been equalled in breadth or effectiveness, as an integrated study of the three basic concerns of economics. It was this comprehensive quality of his work that made him the recognized founder of economics and has preserved his commanding position through time. The *Wealth of Nations* is a model that still justifies study; and I wish to recall briefly some of its salient features; but it will be helpful to an understanding of these first to introduce some of the background of the modern doctrine of freedom.

Freedom has been the guiding principle of policy in western civilization. It has always related to the total behavior of man in society and hence is ultimately a philosophical question. There are two modern theories regarding the ultimate basis of freedom: one, that it inheres in the nature of the individual self and

\* Presidential address delivered at the Twenty-Seventh Annual Conference of the Southern Economic Association at Memphis, Tennessee on November 8, 1957.

its development; and the other, that it emanates from some wider inclusive entity, usually identified as the state. The former theory, first effectively developed by the Greeks, views the "free self-governing personality"<sup>1</sup> as both means and end in the promulgation of social structure and process. The other and older theory—originating probably in the despotic societies of the East—defines the freedom of the individual as an attribute of the state, or of some other overriding historical process, which alone enjoys the power of free initiative. This paper cannot concern itself with the long history of these doctrines and their numerous variants prior to the modern period and only in a general way during the latter.

The principle of personal freedom supplied the cardinal element in the making of the modern western mind. Western man structured his thought and conceived and planned his institutions upon it. Hence theoretical systems and models, embodying this principle were developed in philosophy, psychology, ethics, aesthetics, science, religion, politics, jurisprudence, economics, education, literature, and the fine arts. Institutions and practice followed a parallel course of development.

It was the particular genius of Adam Smith that he introduced effectively the postulate of personal freedom into economics. It is the major premise of the *Wealth of Nations*; although, nowhere is it set forth specifically as such. It simply "breathes through every page of the book," as Allyn Young once said.<sup>2</sup> This "system of natural liberty" is what men of Smith's day probably recognized as the most distinctive feature of the book—what carried over to them its unifying economic concept of a market-guided economy and its policy implications.

Although the modelling of systems upon the principle of individual freedom already had been done in other areas, Smith's work was by no means an imitation of that of his predecessors. He shared their common inspirations but made his own application. In fact, there were very fundamental differences and even profound disagreements among these early modern thinkers, particularly concerning the psychological nature of motivation. One group subscribed to the theory of benevolence, another to self-interest. Still another group maintained that man was motivated by both—benevolent and selfish impulses. This last position was gaining ground during Smith's life and his teacher, Francis Hutcheson, was a leading proponent of it. Smith followed Hutcheson's teachings and even added additional motivations. He constructed his system of ethics on man's psychological propensity to sympathize with the sufferings of his fellowmen;<sup>3</sup> whereas, in his economics, he introduced a number of different propensities, not just self-interest, but also the propensity to truck and barter, the propensity to invent and innovate, and yet others which at least are implied.<sup>4</sup> Given a free market,

<sup>1</sup> The phrase is William Aylott Orton's: *The Economic Role of the State* (Chicago: University of Chicago Press, 1950).

<sup>2</sup> Harvard lecture in 1924.

<sup>3</sup> *Theory of Moral Sentiments*, 1759.

<sup>4</sup> T. Veblen was a severe critic of classical economics, particularly in respect to motivational theory; but he, himself, scarcely surpassed Smith in his enumeration of human instincts.

according to Smith, these propensities would assure maximum productivity and provide a system of checks and balances that would make unnecessary any considerable amount of organized economic or ethical pressures through political action. As a realistic observer, however, he cited a number of probable exceptions to the perfect working of his system of natural liberty, a notable one of which was deduced from yet another human propensity, namely, that of businessmen to cooperate price-wise and wage-wise to the disinterest of other members of society.

The strength of Smith's development of the doctrine of freedom, as well as his use of economic theory, lies in his knowledge and understanding of the emerging structure of capitalist institutions in his times and his concern with policy questions, which these changes were arousing. Of foremost importance was his grasp of the fact and significance of the growth of the interdependent market structure. Complementary to this was his observance of the concomitant rise of the common man in economic activity—individual enterprise, not only in economic life but also in almost every other field of human endeavor—was becoming a mass movement in Great Britain during the Eighteenth century. Thirdly, Smith fully appreciated the role of capital and its accumulation as the principal implementing factor in both of the other phenomena. Lastly, he recognized the role that inventions were playing in the transformation of industrial life. It cannot be gainsaid that Smith's knowledge of institutional developments was incomplete or that he did not comprehend fully the extent and form that the transformations would take. His direct knowledge was drawn largely from the local scene in Scotland, which meant that his understanding of the wider national and international picture may have come largely through inference based upon the observed impacts of wider activity upon the local scene. He certainly did not grasp the full significance of the developing banking system, or the potential of the corporate form of business organization, or the future growth of over-head costs as a result of the combination of these two forces with the accumulation of capital. Consequently, both the postulate of economic freedom and the theoretical value analysis offered fewer complications to him than they should have.

The system of economic freedom, as developed by English economists of the classical tradition, relates primarily to productive enterprise. Consumption was viewed largely as incidental—a by-product, so to speak, of production. This does not mean that they were unconcerned about freedom from hunger and other basic human wants; indeed, a distinguishing characteristic of the English school is their consistent sympathy with the standard-of-living needs and aspirations of the lower income groups. Furthermore, in an economic sense low-living standards were considered inimicable to both productive efficiency and the freedom of productive labor. In the main, however, consumption was treated as an intermediate end which, itself, should meet the test of furthering productivity. Consumption *per se* identified man with the animal kingdom; whereas, it was man's capacities to think and will action that distinguished him from the lower orders of nature. Outlet for these "higher" capacities, in the economic sphere, lay in productive enterprise. This justifies their primary concern with productive or-

ganization and the supplies of the factors of production and the treatment of real income, not as satisfaction of wants, but in its functional relationship to the maintenance and increase of the factors of production. The emphasis placed by Malthus, and more recently Keynes, upon the consumption function constitutes no exception, since it is concerned with the causal relation between consumption and freedom from unemployment, not freedom from hunger.

Thus it is that productive enterprise, in the English thought system, provided the arena for development of true, or at least the higher, freedom—freedom from the circumscribed existence of the animal kingdom, from the niggardliness of Nature, from dependence upon classes and governments, from the bondage of lower impulses within man himself—but stated positively, freedom for the full development of the human faculties. Productive enterprise, as the embodiment of free thinking and acting, was an end in itself. Alfred Marshall summarizes this conception most succinctly: "Work in its best sense, the healthy energetic use of faculties, is the aim of life, is life itself."<sup>5</sup> The great English economists developed their analytical models to satisfy the requirements of their broad concepts of enterprise, organization, growth, and policy. This would explain why they chose to use cost rather than utility norms and long-run rather than short-run molds.

These efforts reach their most exhaustive limits with Marshall. His work clearly embodies, first, an analytical model constructed upon utility, short-run costs, and value; second, a long-run conceptual structure which opens the way for dynamic historical study as well as long-run value theory; and third, a theory of "progressive development of human character and activities,"<sup>6</sup> which is related to the short-run analysis of want satisfaction but is developed primarily in the world of the long-run, activities frame of reference. Three generations of study of Marshall have revealed some minor structural weakness in his work; and we have often wished that he had been more explicit in some places and not have left quite so much to our feeble intuitions; but Marshall's work, like Smith's, still stands as a major challenge to us and a useful guide on the road along which we must grope our way toward policy action through intelligent investigation and clear thinking.

It was not until the development of marginal analysis by Jevons, Menger, and Walras that the precise nature and limits of positive economic theory became clearly defined. It was unfortunate that this achievement tended for so long to divorce economic theory from the studies of structural dynamics and economic policy and to make abstract model-building the chief, if not the sole, activity of economic theorists. It also resulted in placing the "science of consumption" in a central causal role in positive economics. Although the productive enterpriser was retained, to be sure, his freedom was largely taken from him,

<sup>5</sup> *Memorials of Alfred Marshall* (A. C. Pigon, editor), London, 1925; p. 115. See also Marshall's *Principles of Economics*, 8th edition, p. 90, for another expression of his position on the "science of activities" vs. the "science of wants."

<sup>6</sup> Talcott Parsons, "Wants and Activities in Marshall," *Quarterly Journal of Economics*, vol. 46, p. 102.

since he was presumed to obey the dictates of the consumer on the one hand and the technical laws of nature (or mathematics) on the other; actually all he had to do was obey the price mechanism. Even the freedom to be irrational was denied to him. The consumer, on the other hand, enjoyed the freedom of choice—an exciting game of matching marginal utilities, provided you received a sizeable income, but a rather limited and possibly onerous game for the average working man. Thus, whereas, marginal economics remedied the defects in classical theory, it largely eschewed all affinity with classical enterprise liberalism and associated economic theory, by implication, with consumer liberalism.<sup>7</sup>

From this very sketchy review of the historical phases of my subject, I turn now to some considerations of its current aspects. It appears, to some economists at least,<sup>8</sup> that a new stage, or phase, of capitalist society is developing. Its outlines are not distinct as yet; but at the core of its organizational structure most certainly is the business corporation. Actually, this transition has been in process for a century—from the formation of railroad systems in the 1850's and continuing with the rise of large-scale industrial production in the 1880's and mass distribution and the extension of large-scale business integration since World War I. The seeming suddenness in recent changes, as expressed in some of the current literature,<sup>9</sup> only reflects our failure to grasp the nature and extent of earlier developments. In general we have been viewing transitional phenomena through outmoded concepts—economists and policy-makers alike all too often have continued to work with obsolete tools. This has been the case with much of the monopolistic approach in both economic theory and public policy. Also, the recent emphasis upon both short-run-equilibrium and business cycle analyses has tended to constrict economic study to short-run behavior and to magnify the significance of monopoly and windfall profits.

However, fortunately there are evidences that economic theory likewise is in transition. The theory of workable competition, although possibly still more effective in criticism than in model-building, has pointed economic thinking along some new paths: it has redefined the principle of competition in new terms and contexts—operating upon the hypothesis that competition is essentially a dynamic phenomenon that takes many forms and appears on innumerable and changing fronts; and there is a return to long-run analysis, which permits theoretical omission of short-run monopolistic elements and, possibly, the introduction of innovation with resulting further profit-leveling effects. More long-run analysis of the workable-competition type should tend to right the balance in economic analysis. Also it may well afford genuine opportunity for a new integration of efforts with economic historians and policy makers.

<sup>7</sup>G. D. H. Cole discusses this transition briefly, but brilliantly, in "Laissez Faire," *Encyclopedia of the Social Sciences*, vol. V. My own ideas have developed independently, in fact, from inexcusable oversight, without knowledge of Professor Cole's article.

<sup>8</sup>See, for example, J. B. Clark, *Economic Institutions and Human Welfare* (New York: Alfred A. Knoff, 1957, p. 177).

<sup>9</sup>E. g., in *The Organization Man*, William H. Whyte (New York: Simon and Schuster, 1956).

There is likewise developing a hopeful new body of mathematical economics which may produce a renaissance of equilibrium theory that will prove helpful in solution of the problems of a corporate society. Particularly significant are the methods of linear programming and activity analysis which employ the mathematical theory of linear spaces, a much more versatile mathematical approach than the old system of Walrasian equations. It would appear that these methods enable the economist to provide a much more satisfactory analysis of the complex economy and of the decision-making problem of the large corporate firm, and to integrate the firm's behavior into the general schema of price allocation of goods and resources. It also may become possible to treat the firm as a competitor with other firms for factor resources and consumer income in their total markets as well as in their respective area markets. This seems to anticipate the tendency within the new order of things for old individual market lines to disintegrate under the development of multiproduct firms and cross-elasticities of demand and the further tendency of great corporations to extend their operations to the limits of national and even international boundaries. Narrower market limits may be handled apparently with the general framework of this new type of analysis. Conceivably, this new approach could develop a satisfactory model of profit-welfare maximization.<sup>10</sup> More likely, however, is that the broader designs envisioned will be achieved through an integration of the newer methods with the older ones. Each possesses certain virtues that the other has not as yet matched. The development of electronic calculators and their increasing use by business firms and governments will greatly facilitate these new quantitative approaches. The economic theorist of the future is likely to be much more concerned with "business economics" than was the theorist of the past century. Conversely, the businessman is likely to become more of a student of general economics.

There is evidence that economic policy likewise is in transition, although the new trends are much more obscure in outline than is the case in economic organization. It is even more evident that there is a great lag in policy-making behind economic development, as was true in the time of Adam Smith. Existing policy lacks a norm; it is shot through with inconsistencies and contradictions. This latter condition is largely due to two causes: that public policy grows by accretion and is seldom renovated; and that current realities are dealt with by legislatures and courts in terms of traditional forms and procedure. Such forms and procedures frequently are mistaken for substance. If freedom is still the goal of economic policy, then it must be found within the structure of the emerging corporate society, not in archaic symbols, the preservation of out-worn devices, or in efforts to turn back the wheels of business history.

What of our public policy toward corporate enterprise? It well exemplifies what I have just said. All of our great corporations, whether business, government, quasi-government, agricultural, or labor ones, are much alike, since they

<sup>10</sup> The new developments in Mathematical Economics are described comprehensively in a recent book by Tjalling C. Koopmans: *The State of Economic Science* (New York: McGraw-Hill, 1957).

are compounded essentially of the same economic and technological elements. They are the enterprise units of the emerging stage of capitalism. They differ fundamentally from the Nineteenth century individual enterpriser; and no conceivable amount of effort could make them behave like individual enterprisers. Yet a considerable group of our policy-makers have clung persistently to the objective of making them do so. Actually, our policy has been a mixture of regulation, anti-trust, subsidy, government cooperation, protection, and government ownership. In this maize, with its various historical, conceptual, and political origins, it is very difficult to find any controlling principle or common objective. It is doubtful if such can be introduced into public policy without far more objective study of the fundamental nature of corporate society and the likely avenues of mobility within the corporate organization.

It is inconceivable that a corporate society should be able to operate like an individual enterprise one. In many respects its dominant features are the very opposite of the latter. It operates through large pools of resources and by bureaucratic decision-making as contrasted with the sole proprietorship's relatively small capital operation and individualistic decision-making.<sup>11</sup> The corporation has passed through a number of stages with regard to the dominant motives for pooling. During the earlier period of corporate development, concern was primarily with the pooling of capital for relatively large undertakings for which the proprietorship form was inadequate. This was the stage of the development of the corporate capital structure and the parallel growth of corporate security markets. A second phase witnessed the pooling of market power through extension of the use of the corporate legal entity and intercorporate consolidations. This is the monopoly phase which brought rail-utility regulation and the anti-trust laws. A third phase, or possibly sub-phase, witnessed the wide-spread pooling of technology. We are now witnessing a fourth stage in which emphasis is placed upon the pooling of human resources, particularly of the higher-skilled types—executives, lawyers, engineers, scientists, mathematicians, economists, doctors, and trained specialists in all of the business departments. The labor union is actually another aspect of this pooling of human resources, and its recent rise to power is certainly related to the importance of the human pool in this stage of corporate development. It is this last phase, characteristically enough, that is putting the *coup de grace* to the old system of free individual enterprise. There is some fear, and real danger, that the principle of freedom may also be destroyed. However, there is hope for the development of a new pattern of freedom of enterprise within the corporate structure as a result of this very concentration of persons of high ability and training.

It is possible that the danger to enterprise freedom lies not so much in corporate organization as in the widely prevalent philosophy of consumption. As

<sup>11</sup> The concept of bureaucratic decision-making was developed historically by Professor W. T. Easterbrook, of the University of Toronto, at the Seventeenth Annual Meeting of the Economic History Association, at Williams College, September 7, 1957. Papers of the Meeting are published by the Association as a supplement to the *Journal of Economic History*.

already suggested, the doctrine of economic freedom underwent something of a metamorphosis around the turn of the century—from freedom of enterprise to freedom of consumption. The reasons for this change doubtless are various. Probably economists, with their declining interest in the policy overtones of classical economics and their pre-occupation with a type of pure theory bottomed on the consumption function and measuring economic maximization in terms of consumer satisfactions, are partly to blame. The rise of the corporation has blurred the business leadership image; and the association of corporations with monopoly power has crystallized a consumer viewpoint—economic freedom to many in this century has meant freedom from monopoly prices. Furthermore, the courts have strengthened this viewpoint through their interpretation of the intent of the anti-trust laws as being the protection of the consumer's freedom to buy goods at reasonable prices. The rule of reason, which I heartily approve because it smooths the way for the inevitable growth of corporate enterprise, does interpret economical freedom as an abundance of consumer's goods and services; and this has tended to become the first line of defense of the corporations against their critics. The rise of labor unions has been another major factor in the development of consumer-mindedness. The emphasis that unions have placed upon securing a larger share of the national income for labor and the association of wage levels with standards of living have tended toward such an effect, as no doubt has the cleavage that has developed between labor and management. The introduction of social insurance may have made us more consumer-conscious and the advertising industry should not be forgotten.

According to economic theory, higher incomes and the ever-increasing abundance of consumer goods should tend to satiate us and reduce, relatively, our interest in consumption; but I wonder if such has been the case, particularly when this abundance has been accompanied by shorter hours of labor, increased leisure, longer vacations with pay, earlier retirement, and a great increase in the variety of goods. The vision of unlimited consumptive enjoyment may be displacing that earlier vision of unlimited profit to which Sombart ascribed the driving force of early capitalism. We may be entering upon a stage of capitalist development characterized primarily by an enormous expansion in the production of consumer's goods, particularly of the durable type. If such should be the case, it is likely to open vast new opportunities for consumptive enterprise. Such a plethora of consumption goods, plus automation, and atomic energy could conceivably create a situation in which a large part of the population would be engaged primarily in consumption enterprise. I wonder, therefore, if we are not badly in need of a broad philosophical theory of freedom of consumption comparable to the early modern theory of freedom of productive enterprise.

I do not fear for the future of free productive enterprise within the corporate structure. But there is need for a new doctrine of liberalism which comprehends the greatly expanded potentials of the corporate organization for both production and consumption and which integrates the aims and possibilities of free activity in both spheres.

## CETERIS PARIBUS: SOME NOTES ON METHODOLOGY\*

JAMES M. BUCHANAN

*University of Virginia*

At the heart of any analytical process lies simplification or abstraction, the whole purpose of which is that of making problems scientifically manageable. In the economic system we recognize, of course, that "everything depends on everything else," and also that "everything is always changing." For the requirements of analytical rigor to be met fully, we should work only with dynamic Walrasian systems. But real problems can rarely be studied in dynamic terms and almost never in true Walrasian terms.

Real problems require the construction of models, and the skill of the scientist is reflected in the predictive or explanatory value of the model chosen. We simplify reality to construct these models, but the fundamental truth of interdependence must never be forgotten. The interdependence of the economy imposes certain restrictions on any analyst, and each model stands or falls on the test of its consistency with the general equilibrium world. This paper will demonstrate that many highly sophisticated models fail this test, and for the same reason. Specifically, I shall try to show that there exists a common error in the use of the Marshallian device of *ceteris paribus*.

### PARTIAL EQUILIBRIUM ANALYSIS

The most familiar means through which the economist reduces the complex of reality to proportions which are scientifically manageable is provided in partial equilibrium analysis. Beginning with the world as it is, the economist takes two giant steps. First, he removes the dynamic elements by specifying certain basic data. These data, which compose the familiar trichotomy: Wants, Resources, and Technology, become parameters in the model to be constructed. Or, stating this in our terms of reference here, these are placed in the pound of *ceteris paribus*.<sup>1</sup> Presumably the values for these parameters may change independently of the values for the remaining variables of the model. But once this step is taken the economist is still confronted with the whole Walrasian set of interdependent variables which he presumably can organize in some set of structural relationships. But since both the data and the intellectual capacity for

\* An original version of this paper was delivered at the annual meeting of the Southern Economic Association in Raleigh, North Carolina on 16 November 1956. I am indebted to Jesse Markham of Princeton University for his comments on the delivered version, and to Almarin Phillips of the University of Virginia for his suggestions for revision.

<sup>1</sup> This classification must be carefully qualified. In the real world, it seems unlikely that even these basic data are genuinely independent. An individual's taste pattern may be modified by the values of the dependent variables of the system, e.g., the structure of prices. Similar statements may be made with regard to both resources and technology. There does appear, however, to be some value in distinguishing these variables as true parameters. It is at least conceptually possible that their values remain uninfluenced by the values of the dependent variables of the system. The same statement cannot be made in reverse.

solving these equations simultaneously are lacking, the economist deliberately limits his task still further. He tries to choose a particular subset of relationships, and he then proceeds to *neglect* the remainder, even though he may fully recognize that certain spill-over effects are exerted on the variables which he has neglected by the changes which he imposes upon the variables chosen for closer scrutiny.

The size of the model which remains after this second step is taken depends both upon the purposes of the analysis and the structure of the system. If the purpose is purely that of mathematical manipulation, the process of partial differentiation can always be carried out upon any variable of the system, with the remaining variables treated parametrically. In other words, if the purposes of analysis are purely formal, all of the variables except two can be placed literally in *ceteris paribus*, and the relationship between these two variables traced. Presumably the economist's interests in analysis go beyond this and extend to the derivation of economically meaningful relationships. If this constraint is placed upon him, the structure of the system itself must dictate his choice among variables to be closely examined and those to be treated parametrically. If cross elasticities are high, little simplification may be achieved in this second step. Few, if any, meaningful results may be achieved by using *ceteris paribus* to eliminate the study of large numbers of variables. If such variables are closely related, they must be studied simultaneously; there is no escape route open. On the other hand, if the various subsectors of the economy exhibit substantial independence, this step may reduce the working model to reasonable proportions. Of especial significance in this respect is the size of the total system. Partial equilibrium analysis is possible only when the total number of relationships is quite large. Clearly if the total number of relationships is small and any substantial interdependence is indicated, the effects of any initial change must be traced throughout the whole system. The required damping can take place only as an initial shock spreads and becomes diffused through a sizeable web of interdependence.

It should be emphasized that this second step which consists of *neglecting* second, third, and fourth order effects, even when it is analytically legitimate, is not equivalent to freezing the neglected variables in the famous pound of *ceteris paribus*. These variables are treated as parameters for the immediate purposes of the analysis, but it is recognized that their values must, in fact, be modified by the shock initially imposed. Such variables thus fall into a different classification from those genuine *ceteris paribus* variables: wants, resources, and technology, the values for which, at least conceptually, are not modified by the changes imposed on the system. The neglected variables are among the total set of interdependent variables of the system. They are treated as parameters because the analyst desires to work with a subset rather than the whole set. But subset analysis will yield economically meaningful results only if the final shifts in the values of the parameters are reasonably small.

The discussion may be more firmly anchored if we introduce the familiar problem concerning the Marshallian demand curve, perhaps the most widely

used partial equilibrium tool. The methodological issues involved here have been developed at length by Milton Friedman, although in somewhat different terms.<sup>2</sup> When the economist is confronted with the problem of determining the influence of a price change on the quantity of a particular good demanded, the influence of such forces as money income and other prices become disturbing. If we exclude relationships of close complementarity and substitutability, we know that the change in one price does not affect other prices in any substantial way. Therefore, we neglect such changes as may be generated. We do not, thereby, appear to impair the predictive value of our model which is reduced to two-dimensional or blackboard size. At first glance, this neglect appears equivalent to assuming that these variables (i.e., other prices) remain unchanged in the process along with such things as tastes. If, however, the literal *ceteris paribus* restriction is placed on all such variables as other prices and money incomes, that is, if these are not allowed to change, analysis becomes impossible in the ordinary static framework. For here the analyst would be faced immediately with the logical dilemma posed by Professor Frank Knight: How can *one* price change? One price cannot, of course, change in such a setting unless offsetting changes in other variables are allowed. In equilibrium any given commodity has only one price which is consistent with the equilibrium values for all of the remaining variables of the total system. If the basic data are not presumed to change (and, since these are genuinely exogenous, useful "political economy" conclusions could hardly be expected in this fashion), a displacement must involve some relaxation of the equilibrium conditions in other sectors, that is, some release of the neglected variables from the literal confines of *ceteris paribus*.

What is required here is a modification of the literal meaning of *ceteris paribus*. If we define the restriction to mean that included variables do not change *substantially*, analysis in the usual manner becomes possible, provided always that the system is sufficiently large. Correct analysis may or may not require that the necessarily-present offsetting or compensating changes in the other variables be taken explicitly into account. The method here will depend on the problem to be solved. And, for some problems which do not require the recognition of such offsetting variations, the use of the literal *ceteris paribus* terminology need not lead to erroneous results.

Look at the so-called Hicksian version of the demand curve. One price is allowed to change while money incomes and other prices are assumed unchanging. As mentioned above, and as Friedman has shown, this construction is logically inconsistent in the strict framework of comparative statics. Nevertheless, the construction provides a useful tool of analysis if the offsetting variations, *which must be present*, can be allowed to take place outside that set of variables directly influencing the behavior of the individual or the group under observation. For example, suppose that the problem is that of deriving the demand curve for cheese. As the price of cheese is allowed to change, something else must change in a compensating fashion. But conceptually at least, this compensating change

<sup>2</sup> Milton Friedman, "The Marshallian Demand Curve," *Journal of Political Economy*, LVII (1949), pp. 463-495.

can take place anywhere in the system, let us say in the price of popcorn. If the cheese demanders constitute an entirely different group from the popcorn demanders, the offsetting variations in the popcorn price need not be taken explicitly into account. Or, to vary the example, the offsetting variation may be in the price of bread, a commodity consumed by all groups. Here the relative influence of a change in the price of cheese on the behavior of the particular cheese-consuming group may be so large relative to the influence of the offsetting change in the price of bread on the behavior of the same group that the latter price change may be neglected.

In more general terms, the predictive error involved in neglecting all offsetting or compensating variations, which is equivalent to using *ceteris paribus* literally, need not be large if we remain content to analyze the behavior of one individual or some one group of individuals smaller than the total group. This provides some justification for the widespread acceptance and use of the uncompensated demand curve.

As Friedman has shown, however, erroneous results will be forthcoming from this procedure when the attempt is made to reach conclusions supposedly applicable for the totality of individuals, that is, for the whole economy, and not for a specific subsector. The dangers in the misuse of *ceteris paribus* are quite real for all cases where an attempt is made to extend conclusions reached in partial equilibrium analysis to general equilibrium problems. When the whole economy is the subject of analysis, offsets must be introduced. Suppose one price is allowed to change as before. If money income is to be held constant, other prices must be allowed to vary in some compensating manner. If the system is large, the compensating change in *any one* of the many other prices may be small enough to be neglected. But the total of such changes must completely offset the initial change imposed on the action variable. The aggregative effects of such changes must be comparable in magnitude and importance to the effects of the initial and localized variation. Friedman has shown how the oversight of this point has led to serious error in the analysis of the comparative effects of income and excise taxes.<sup>3</sup>

#### THE DEMAND CURVE FOR MONEY

The methodological error discussed here is present in some of the most important modern contributions to economic theory. The recent work by Don Patinkin may be used as a first illustration.<sup>4</sup> This work is selected both due to its current importance and to the clarity with which it poses the fundamental issue of this paper. Patinkin introduces a basic distinction between the aggregate demand curve for money and the market equilibrium curve relating the quantity of money and the price level. The first he derives from individual experiments, the second from the reactions of the whole market. He

<sup>3</sup> Milton Friedman, "The 'Welfare' Aspects of an Income Tax and an Excise Tax," *Journal of Political Economy*, LX (1952), pp. 25-33.

<sup>4</sup> Don Patinkin, *Money, Interest, and Prices* (Evanston: Row, Peterson and Co., 1956). I should like to thank Patinkin for his efforts to convince me that my methodological criticism is unfounded. Needless to say, he has not been successful.

criticizes neo-classical writers for having failed to note the necessary differences between these two curves. I shall show that there is no distinction if the aggregate demand curve is properly derived and that Patinkin's discussion is based upon the improper usage of *ceteris paribus*.

He first conceptually derives an individual demand curve for money. This curve is constructed by confronting the individual with a change in the price level "unaccompanied by any change in the initial endowment of money."<sup>5</sup> The individual demand curves so derived are then summed over all individuals to produce Patinkin's aggregate demand curve for money. Although this curve is presumed to have a negative slope there is no reason why it should have the unitary elasticity property normally attributed to it by neo-classical theorists.

The second curve, which is called the market equilibrium curve, is derived by changing the supply of money in the system and then examining the effects of this change on the price level. The resulting curve is shown to possess the unitary elasticity property.

From the discussions in the previous sections of this paper, it is clear that Patinkin's aggregate demand curve for money is not a methodologically legitimate construction. While it is possible to talk of an *isolated* individual experiment in which the price level is allowed to change *ceteris paribus*, this procedure cannot be used as the basis for deriving an aggregate demand curve. The price level facing an individual or group can be allowed to shift, without the supply of money changing, if we are content to examine the demand for that *individual or group only*, the necessary offsetting or compensating change taking place in the price level confronting *other* groups in the economy. But this cannot be done when we consider all individuals, or a representative one. The price level cannot be shifted, *ceteris paribus*, with any hope of deriving results which are economically meaningful. If the other variables of the economy are held constant, the price level may change only if the nominal amount of money is allowed to change. Therefore, the market equilibrium curve, which does in fact allow the price level and the nominal quantity of money to change in compensating fashion, is the only meaningful demand curve for money which may be derived for the whole economy.<sup>6</sup>

<sup>5</sup> *Ibid.*, p. 42.

<sup>6</sup> The interdependence of supply and demand which is inherent in the Patinkin argument does not appear to be the same as that mentioned by Pigou, although the relationship is close. (See, A. C. Pigou, "The Value of Money," *Quarterly Journal of Economics* (1917-1918) Reprinted in *Readings in Monetary Theory* (New York: Blakiston, 1951), pp. 181-182. Pigou states that the demand and the supply of money are not independent as in the case of an ordinary commodity. But the interdependence he discusses stems from the effects of a possible change in supply on the "tastes" of individuals regarding the use of money. He cites Cannan to the effect that velocity would increase as the price level, and the quantity of money, increase. This change in tastes brought about by an increase in the money supply generates a shift in the demand curve. The difference between this sort of interdependence and that involved in the Patinkin discussion is that the Pigou-Cannan interdependence is not conceptually necessary. An independent demand curve may be drawn on the assumption that the resultant effects on habits do not materialize (see Footnote 1). In the Patinkin analysis, on the other hand, such independence between supply and demand is not even conceptually possible. The demand curve *must* shift with a shift in supply; various positions on

Perhaps the most interesting aspect of Patinkin's whole analysis is that in his Mathematical Appendix<sup>7</sup> he rigorously explains the mathematical difference between the curve derived from individual experiments and that derived from market experiments. But at the same time he overlooks the economic meaning of this admittedly important distinction. Had he chosen to look more closely at the economic implications of his mathematical argument, he would have surely seen that the aggregate demand curve is useful only if it represents genuinely attainable alternatives. In general, demand curves are useful only because they allow some predictions to be made regarding the effects of changes in supply. Hence each point on a demand curve must represent an attainable equilibrium between demand and supply. It is extremely difficult to imagine any other possible use for a demand function. It is true, of course, that a market need not always be in equilibrium. But disequilibrium positions are *off* the relevant demand and supply curves, not on them. By Patinkin's procedure any point on the demand curve for money except one arbitrarily chosen equilibrium point must represent a position of disequilibrium, if indeed it represents a position at all.

#### MACRO-ECONOMIC ANALYSIS

Another means through which the economist may try to simplify reality is that of moving out of partial equilibrium analysis all together and working with a small macro-economic model. Instead of choosing to work with a single sector of the system and then extending his conclusions as appropriate, he chooses from the start to consider the whole economy. But in order that a reasonably limited set of structural relationships describe the economy, each single variable used must represent a composite of several variables and can only be attained through an aggregation process.

The system so constructed will consist of a set of structural equations. Certain variables of the system will be classified as dependent, others as independent or as parameters. And given some initial set of values for the parameters along with the functional relationships, the corresponding equilibrium values for the dependent variables of the system may be found.

The analytical process here, as in partial equilibrium, is ordinarily conceived as comparative statics. A change is imposed on one of the parameters, with the remaining ones held in *ceteris paribus*, and the effects of the change on the values of the dependent variables is examined.

But what are the true parameters in the macro-economic model? The same economy is under observation, and, as before, wants, resources, and technology provide the only basic data which can be taken as genuinely independent. It seems clear that we do not get much that is of value if we allow only these parameters to shift about since there is little external control which can be exerted on such shifts. Perhaps it is somewhat useful to know how an economic

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the demand curve are not, therefore, conceptually attainable alternatives. I am indebted to E. C. Simmons for reference to the Pigou discussion.

<sup>7</sup> Patinkin, *op. cit.*, pp. 275-288.

system will react to the introduction of a new invention or a shift in liquidity preference, but since no one has yet invented a means of producing inventions or of predicting mass psychology, this knowledge will prove of relatively little value in "political economy" terms.

It is interesting to examine the standard Keynesian model in this respect. The basic data are provided in the three psychological propensities. Each implies a functional description of human behavior and each is subjected to possible shifts. In the highly simplified model the results obtained would perhaps be of little value. But once government demand is included, the "wants" part of the basic data trichotomy is subjected to external influence and control through collective action.

The quantity of money is also normally taken as a parameter in the orthodox Keynesian model. In modern economic systems it seems that the quantity of money can be taken as an independently determined parameter since government action can set a value for this independently of the values for the remaining variables of the system. Therefore, that comparative static analysis would seem useful which takes as its beginning an equilibrium position with a given money supply, changes this quantity, and then traces through the effects of this change on the values for the remaining variables of the system.

But how can the quantity of money change unless one or more of the psychological propensities shifts? Can the quantity of money be treated as independent even in an ideally simplified system? The answer to this question depends on the structure of the system. Specifically, it depends on the manner in which the so-called budget variables are introduced. If government outlay is fixed and is made equal to taxes, the quantity of money cannot vary unless "tastes" of private people vary.<sup>8</sup> But such an old-fashioned balanced budget equation is not likely to be found in any modern macro-system construction. More often we find a system which includes both government expenditures in real terms and the tax rate to be independent variables. But if these are genuinely independent, the quantity of money is no longer a parameter. Here is a source of a very common error. The money supply, government outlay, and taxes cannot be taken as three separate independent variables. The test of a genuinely independent variable is that its value remains unchanged as other values in the system are modified. But with a fixed quantity of money, clearly government outlay and taxes must be functionally related. The two sides of the budget may be treated as independent only if the quantity of money is made dependent on the resultant surplus or deficit creation.<sup>9</sup>

<sup>8</sup> Assume that the government (the central bank) creates money and then purchases bonds in the open market. This use of money is a government outlay as well as that involved in the expenditure for real goods and services. It is, of course, possible that real government expenditures for goods and services can be kept constant and equal to taxes while the quantity of money is shifted.

<sup>9</sup> The recent work of Challis A. Hall and James Tobin may be cited as an example in which this error occurs ("Income Taxation, Output, and Prices," *Economia Internazionale*, VIII, 1955, pp. 522-542). In this, Hall and Tobin specifically classify the following as independent variables:  $M$ , the quantity of money;  $t$ , the tax rate;  $B$ , government interest payments

If economically meaningful results are to be produced, great care must be exercised in classifying variables, and the use of *ceteris paribus* as a tool of analysis must be approached with great caution. We may refer to Patinkin's macro-economic model for specific examples. In his attempt to reduce his analysis to two-dimensional proportions, Patinkin employs the *ceteris paribus* device loosely and inappropriately. For example, after he draws the familiar aggregate spendings diagram which relates gross expenditure and real income, he states: "It follows that, *ceteris paribus*, an increase in the price level above  $p_0$  causes a decrease in the real value of cash balances,  $M_0/p$ , and a consequent downward shift in the aggregate demand curve of Figure 11. . . ."<sup>10</sup> The obvious question here is the macro-economic version of the Knightian query. How does the price level change? If it shifts due to a change in spending habits, this in itself would shift the aggregate demand curve. If it shifts due to a change in  $M$ , then the real value of cash balances need not change.

One further example from Patinkin's work will suffice. I shall reproduce Patinkin's Figure 15 (p. 146) which relates the quantity of money demanded to the rate of interest. The methodological difficulty appears in the notation itself. The demand equation contains the supply of money,  $M_0$ , as a parameter. Hence the demand curve cannot possibly represent alternative positions traced by a shifting of supply. A change in  $M$  will shift the whole demand function. This circularity stems from the implicit assumption upon which the whole diagram is constructed, namely, that the rate of interest can change in some way independently of shifts in any of the other variables in the system (the price level,  $P_0$ , real income,  $Y_0$ ).

Patinkin is, of course, too careful an economist to allow this methodological deficiency to distort seriously his final conclusions and thus his genuine contribution. When he considers his model in its entirety, he properly labels as parameters those variables which are, and as dependent those variables which are not. His is an expositional deficiency which lies almost exclusively in his attempts to explain the workings of a model containing several mutually dependent variables in all of the equations. The values for these variables can only be determined simultaneously, and no amount of effort will yield a satisfactory way of showing simultaneous solution for several variables in two dimensions. In his attempt to be both rigorous and elementary, Patinkin has perhaps relied too much on the Marshallian crutch.<sup>11</sup>

(presumably including bond retirements) in money;  $G/p$ , the expenditure of government for goods and services in real terms. They then proceed to examine the effects of a change in the tax rate while holding the other independent variables in *ceteris paribus*. They sense the difficulty here but attempt to explain it away by stating that the changes induced in the money supply by the presence of surpluses or deficits is small relative to the total money supply and also that these are dynamic changes which are not relevant for static analysis (p. 526). This explanation overlooks one basic and all-important point. The change in  $M$  induced by changes in the tax rate is of the same logical dimension for the model as the tax rate change itself.

<sup>10</sup> Patinkin, *op. cit.*, p. 133.

<sup>11</sup> In the development of his analysis Patinkin follows the procedure of treating certain

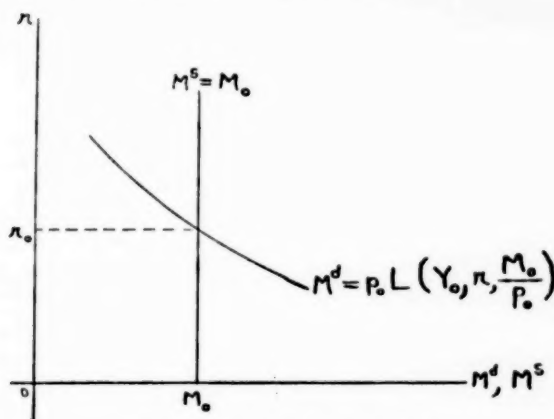


FIG. 1. Patinkin's Figure 15 (p. 146)

While Patinkin has avoided the pitfall of drawing misleading and erroneous implications from his analysis, others have not been so fortunate. We may take the work of Kenneth Boulding as an example. I refer to his so-called distributional paradoxes which he advanced in his book, *The Reconstruction of Economics*.<sup>12</sup> There is no need to develop the Boulding construction in detail. It will be sufficient to reproduce only a few of his basic identities. We need not be concerned with the derivation of these since I shall have no quarrel with their content.

Begin with his equation (14).

$$W = C_h + dQ_h - (dM_b + dK_h - dK_h' + D) \quad (14)$$

This says that total wages,  $W$ , is identically equal to consumption,  $C_h$ , plus the change in the value of capital assets held by households,  $dQ_h$ , minus the items in the parenthesis. To simplify, he sets the items in the parenthesis equal to  $T$ , which he calls the transfer factor, in equation (17).

$$T = dM_b + dK_h - dK_h' + D \quad (17)$$

The transfer factor is identically equal to the change in business money balances,  $dM_b$ , plus the change in household debt to business,  $dK_h$ , minus the change in business debt to households,  $dK_h'$ , plus dividends,  $D$ . Any change which increases the value of the transfer factor tends to increase gross business profits and to reduce total wages.

variables as exogenous and later incorporating these as endogenous to the system. This procedure has been held to be legitimate by Koopmans. (See, Tjallingis Koopmans, "When Is An Equation System Complete for Statistical Purposes," *Statistical Inference in Dynamic Economic Models* [New York: John Wiley & Sons, 1950], p. 394). My main emphasis has been that of suggesting that such procedure is likely to lead to serious error.

<sup>12</sup> New York: John Wiley & Sons, 1950.

From these equations, and the others used in their derivation, Boulding reaches his strange distributional paradoxes. He says that an increase in consumer credit,  $dK_k$ , will increase business profits. "It is clear that extending credit to households has a directly favorable effect on gross profits, and shifts the basic distribution pattern from labor to non-labor income" (p. 255).

On the other hand, "... the greater the volume of securities sold to households, the more the distribution pattern is shifted toward wages and away from gross profits" (p. 255). Or again, "... the direct effect of business distribution is to increase gross profits by the same amount" (p. 256).

This is all wrong. We may accept the Boulding construction of the identities and also the simple algebra by which he reaches his conclusions. But we cannot accept the conclusions themselves. In reaching them, Boulding has fallen into the methodological trap which we have discussed. He has treated certain variables parametrically without an examination of the economic meaning of such treatment. Or, in terms of this paper, he has placed in *ceteris paribus* variables which do not belong there at all.

Look now again at his transfer identity (17). The algebra is simple. Quite clearly if consumer credit increases with the other values on the right hand side of the equation remaining unchanged, then  $T$  must increase and thus  $W$ , wages, must decrease and gross profits increase. But the real question is: How can consumer credit increase without some of the other variables on the right side changing at the same time and in a compensating fashion? We should note that Boulding assumes a constant quantity of money (p. 254). Business cannot simply decide to expand consumer credit and "open sesame" it is done. Any of several things may happen. An extension of consumer credit to households on the right hand side would probably involve some business drawing down its money balances somewhere along the line. The retailer can extend credit to the consumer by increasing his indebtedness to the wholesaler. The wholesaler can, in turn, extend such credit to the retailer by increasing his indebtedness to the manufacturer. The manufacturer could conceptually meet the pressure by extending his indebtedness to production workers. But at this point business indebtedness to households, a negative factor in the transfer equation, would be increased to offset the original increase in  $dK_k$ . More realistically, of course, the manufacturer or the wholesaler or the retailer would allow the extension of consumer credit by a drawing down of money balances,  $dM_b$ , in the equation. Another alternative is a reduction in the outpayment of dividends. Or more securities could be sold to households. In each of these conceptually possible cases, there is no change in business profits merely as a result of a change in the volume of consumer credit outstanding.

The same sort of reasoning can be applied to each of the other Boulding paradoxes. Take the case in which he says that an increase in securities sold to households increases the share of income going into wages. In return for the securities, businesses receive money which builds up their money balances, or more dividends may be paid out, or consumer credit may be extended. No

effect is produced by either of these changes on the value for the left side of the equation, the transfer factor,  $T$ .

At one point Boulding appears to recognize this interdependence among his variables, but he is too enamoured of his paradoxes to notice its importance. He states that he neglects "secondary interactions" for short-run fluctuations. But closer examination reveals that he does not sense the basic sort of interdependence with which we have been concerned. He says, for example, that the "most important of these (secondary interactions) is likely to be the reaction of changes in debt of dividends on the business-household balance of payments. Thus an increase in dividend payments may in part be offset by the fact that some of the money which is distributed simply remains in households without being spent" (p. 257). This statement indicates that Boulding fails to see that the money could not be distributed in the first place without some primary interaction on the other variables of the identity. We may neglect secondary interactions, but not primary ones. How could business possibly increase dividend payments without either (1) reducing money balances (2) reducing loans to individuals (3) increasing indebtedness to households? As with our other illustrative examples, this could only happen if we move outside the static framework, that is, unless we allow some of the genuinely independent variables of the system to change.

#### CONCLUSION

It has not been my purpose in this paper to criticize any particular work. The very eminence of the economist whose works have been used as illustrations indicates that the methodological error which has been discussed is important and that its use is widespread. We have been thrust too rapidly over into the greener pastures of general equilibrium without recognizing that we cannot take with us many of our partial equilibrium trappings. Many of us who have been raised on Marshall try to live on Keynes without having made the necessary methodological transformation. *Ceteris paribus* helps us to clear away a lot of jungle in partial equilibrium analysis, and partial differentiation is extremely useful in formal mathematics, but either of these devices may turn out to be a hindrance in general equilibrium economics.

This leads to a final suggestion on method. When the economist is confronted with a general equilibrium problem, that is, any problem which involves a solution for the whole economy, whether the process used be an extension of partial equilibrium, aggregative models, or generalized Walrasian systems, he must recognize the Walrasian truth of economic interdependence. And this must be taken into full account. A good dose of double-entry bookkeeping is about the best medicine one can take here. There are no independent variables on a balance sheet, and an accountant would think one foolish who proposed to change one entry with all the others left unchanged. Yet this procedure, which seems so clearly wrong when we think in terms of balance sheets, is pre-

cisely equivalent to that involved in trying to rely too much on *ceteris paribus* in general equilibrium.<sup>13</sup>

<sup>13</sup> The problem discussed in this paper is related to the problem of stability in dynamic models. As Samuelson has suggested, meaningful theorems in comparative statics can only be derived upon the assumption or demonstration of the presence of certain stability properties of a system. The stability problem *per se* is concerned with the behavior of a system after some displacement has been imposed on a pre-existing equilibrium. The problem discussed here has been wholly that of defining economically meaningful displacements. However, in discussing the appropriate criteria for testing the stability of a multiple market system Samuelson appears to arrive at conclusions which may be easily translated into our *ceteris paribus* terms of reference. He says: "... in terms of a truly dynamic process the equilibrium must be stable for arbitrary initial conditions or displacements and for arbitrary nonsingular transformations of variables, but *not* necessarily for arbitrary modifications of the dynamic equations of motion such as are involved in the Hicks procedure of holding subsets of other prices constant (by violating or relaxing true dynamical relations). In principle the Hicks procedure is clearly wrong, although in some empirical cases it may be useful to make the hypothesis that the equilibrium is stable even without the 'equilibrating' action of some variable which may be arbitrarily held constant." (Paul A. Samuelson, *Foundations of Economic Analysis* [Cambridge: Harvard, 1947], p. 273.)

## SCHUMPETER'S VIEWS ON THE RELATIONSHIP OF PHILOSOPHY AND ECONOMICS

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Since its publication four years ago, Schumpeter's *History of Economic Analysis* has been reviewed in most of our important professional journals, and the consensus of the reviewers is that this work easily eclipses all previous efforts in the field of the history of economic thought. The scope of the book is certainly unique, for no other writer has attempted such an intensive analysis of the development of economic thought from the time of the Socratics to the present day. And most readers would probably agree that Schumpeter's interpretative efforts bear little resemblance to the more stereotyped variety frequently found in current manuals. Indeed, a number of his interpretations of early economic literature differ so sharply from accepted views that they may be correctly described as unique. This is, of course, only one of many reasons why a study of the book proves to be such a stimulating and rewarding experience.

One of the more novel and provocative theses which Schumpeter develops in his book is that "economic analysis has not been shaped at any time by the philosophical opinions that economists happened to have."<sup>1</sup> An adequate critical study of this thesis would require a fairly comprehensive survey of the major historical changes in philosophy and an analysis of the possible impact of these changes on the work of prominent economists. The brief comments in the present paper, however, are largely exploratory and are only designed to raise questions concerning the validity of Schumpeter's argument. No apologies are offered, and I hope none are needed, for the failure to offer unequivocal or conclusive answers to these questions. In any case, there may be some merit in an old quip to the effect that the purpose of education is to raise rather than to solve problems.

In order to avoid semantic issues, the meaning which Schumpeter ascribes to the term "economic analysis" should be stated at the outset. Although he offers no formal definition, the following passage from one of the introductory chapters provides a reasonably clear explanation of the meaning of the term:

What distinguishes the 'scientific' economist from all the other people who think, talk, and write about economic topics is a command of technique that we class under three heads: history, statistics, and "theory." The three together make up what we shall call Economic Analysis.<sup>2</sup>

In editing the manuscript, Elizabeth Schumpeter noted parenthetically that a fourth "fundamental field," Economic Sociology, was later added by Schumpeter as a kind of afterthought. The important point, however, is the stress

<sup>1</sup> Joseph A. Schumpeter, *History of Economic Analysis* (New York: Oxford University Press, 1954), p. 31.

<sup>2</sup> *Ibid.*, p. 12.

which Schumpeter places upon the use of so-called "tools and theorems"<sup>3</sup> in economic analysis. In brief, what he designates as "scientific" economics is all that is subsumed under economic analysis.

The question at hand, therefore, is whether the historical development of these tools and theorems has been influenced by the philosophical ideas which were prevalent at different periods of time. Although Schumpeter denies any such influence, he is careful to make at least two important qualifications. In the first place, he does not argue that economic analysis is "logically" autonomous.<sup>4</sup> On the contrary, he takes no position regarding the problem of whether, on purely *a priori* grounds, economic analysis should be regarded as independent of philosophy. What he does say is that, *in fact*, no historical interdependence can be shown to have existed.<sup>5</sup> And, secondly, Schumpeter admits that what is commonly called "economic thought" has been affected by the philosophical views of economists.<sup>6</sup> For example, he says philosophy has frequently influenced economists when they dealt with essentially normative problems. It is only the restricted area of economic analysis which he maintains has been free of such influence.<sup>7</sup>

A few examples which Schumpeter uses to illustrate this thesis may serve to clarify his position. He says the purpose of these illustrations is to show that the philosophical views of economists are nothing more than a "garb" which can be discarded without affecting their analytical work in any manner.<sup>8</sup> The first four examples he gives are taken from other disciplines, presumably because they are analogous to the situation that has existed in economics. Thus Newton subscribed to a philosophy which included Christian beliefs, yet his scientific work was "not deflected from its course" by his theological convictions.<sup>9</sup> Again, Leibniz "went readily from matters of pure physics and mathematics to matters of theology" and "evidently saw no difference of methodological

<sup>3</sup> *Ibid.*, p. 31.

<sup>4</sup> *Ibid.*, pp. 31-32.

<sup>5</sup> *Ibid.*, p. 32.

<sup>6</sup> Among the various works which deal with the relationship of philosophy and the broad area of economic thought, at least two deserve special mention. One of the earliest and best known of these, James Bonar's *Philosophy and Political Economy* (London: George Allen & Unwin Ltd., 1893), is usually regarded as the "English standard work," e.g., see Schumpeter, *op. cit.*, p. 28. A more recent publication, Werner Stark's *The Ideal Foundations of Economic Thought* (New York: Oxford University Press, 1944), contains a penetrating analysis of the impact of the philosophy of Locke and Leibniz on classical economics, but primary emphasis is given to broader issues than the one discussed in the present paper.

Most manuals in the field of the history of economic thought give only superficial attention to the influence of philosophy on economics. One exception is W. C. Mitchell's *Lecture Notes on Types of Economic Theory* (New York: Augustus M. Kelley, 1949), which emphasizes the philosophical background of classical economics.

<sup>7</sup> For a detailed statement of this thesis and a summary of his specific qualifications, see Schumpeter, *op. cit.*, pp. 28-32. Throughout subsequent sections of the book, this argument appears as a recurring theme in connection with his evaluation of different writers and "schools" of economics.

<sup>8</sup> *Ibid.*, p. 31.

<sup>9</sup> *Ibid.*, p. 30.

principle between the two."<sup>10</sup> The same types of comments are made concerning the work of Leonhard Euler and James P. Joule. Not only was the scientific work of these men independent of their theological convictions, but it was "compatible with *any* philosophical positions" and "there would be no point in trying to explain its methods or results by their philosophical positions."<sup>11</sup> Just as the theological and philosophical garbs can be removed in the case of physics, so can they be discarded in the field of economic analysis.<sup>12</sup>

Although this alleged autonomy of economic analysis might be applicable to the work of some economists, there appear to be good reasons for thinking Schumpeter has overstated his case. In order to reduce the problem to manageable proportions, I have chosen to focus primary attention on two of the analytical tools used in formulating what is frequently called the classical theory of economic development. More specifically, emphasis will be given to various philosophical interpretations of the nature of change and the probable influence of these interpretations on the classical analysis of both population and natural-resource problems. In addition, some brief remarks will be made concerning one of the distinguishing features of Schumpeter's economic theory. Because the concept of change is given such emphasis, a few preliminary comments about the history of the problem in philosophic thought are offered for the purpose of bringing the issues into better perspective.

Controversy about the nature and importance of change began to attract widespread interest during the time of the earliest speculations of Greek philosophers. On the one hand, a group of pre-Socratics led by Heraclitus, basing their argument on the doctrine of perpetual flux, presented what might be called a "dynamic" view of the world. For these philosophers, the world was one in which the phenomena of nature were destined to change throughout all future time.<sup>13</sup> However, Zeno the Eleatic adopted the opposite, or static, view with his insistence that all change is mere appearance and hence unreal. In brief, he argued that the belief in change is the result of unreliable sense experience.

Despite the fact that the static world view appeared to contradict daily experience, it was incorporated into the Socratic philosophy and thus influenced both philosophy and science for more than two thousand years. Like Zeno, the Socratics were preoccupied with a search for those permanent attributes of nature which ostensibly lay behind the world of sense experience. In this context, the heritage left us by the ancient philosophers could perhaps be illustrated most clearly in the works of the Stoics. The only type of change which

<sup>10</sup> *Ibid.*

<sup>11</sup> *Ibid.*, pp. 30-31. These are the specific points about which questions will be raised in the present paper. No reference will be made to the theological "garb," primarily because I am convinced that such considerations are largely irrelevant to the central issue under discussion.

<sup>12</sup> *Ibid.*, p. 31. This general thesis is restated in several places throughout the book, e.g., pp. 409 and 779-80. Of particular interest is his denial that the Hegelian philosophy influenced Marxian economic analysis (p. 414) and his insistence that utilitarianism did not affect the analytical work of Mill, Jevons, etc. (pp. 134 and 409).

<sup>13</sup> Bertrand Russell, *A History of Western Philosophy* (New York: Simon and Schuster, 1945), pp. 38-47.

they admitted into their system was what might be called "repetitive" or cyclical. Moreover, it was rigidly deterministic. For example, according to Stoic teaching, the emergence of a new civilization entailed nothing more than an inexorable cyclical repetition of events that had occurred countless times before. Marcus Aruclius expresses the idea quite succinctly when he asserts that a discerning man forty years of age "has seen all that has been and shall be."<sup>14</sup> This view has been called static by modern philosophers, *not* because it denies the existence of all types of change, but rather because it makes no provision for the emergence of anything new or novel in the world.

Such, then, was the general world view inherited from the Socratics and the Stoics. To trace even briefly the gradual abandonment of these static views would require more space than the topic of this paper justifies. Suffice to say, developments in science and philosophy during the past five centuries have, in effect, caused the dynamic philosophy of Heraclitus to be reinstated and the static systems of Plato and his followers to be discarded. As Bertrand Russell has remarked, the doctrine of perpetual flux is painful, but modern science "can do nothing to refute it."<sup>15</sup>

This change in outlook, however, had not been completed during the period in which the classical economists were writing. On the contrary, what is now called the evolutionary point of view had not yet attracted widespread attention in either philosophy or science. Anticipations of this viewpoint were, of course, becoming more frequent, especially in the areas of paleontology, geology, and biology. However, eighteenth and early nineteenth-century philosophers usually thought of the problem of change in terms of some form of mechanistic determinism, which was probably inspired in large measure by the dramatic success of Newtonian physics.<sup>16</sup> But a deterministic philosophy, of course, assumes there is no essential novelty in the world, for it "regards the future as implicit in the past."<sup>17</sup> Closely allied to this conception was the widespread belief in the existence of immutable, universal laws of nature, a preconception to which most eighteenth-century philosophers subscribed. As will be noted below, the philosophic doctrine of natural law probably had an important bearing on theoretical developments in economics. In any case, the nature and extent of such philosophical influence may be illustrated by referring briefly to the Malthusian law of population, which was an integral part of the Ricardian theory of economic development.

The particular facet of the Malthusian theory that has special relevance in this context is the allegation that the population tends to grow at a predeter-

<sup>14</sup> *The Communings with Himself of Marcus Aurelius Antoninus*, trans. C. R. Haines (New York: G. P. Putnam's Sons, 1916), XI, sec. 1. See also Bertrand Russell, *op. cit.*, pp. 254-55.

<sup>15</sup> *Ibid.*, p. 47.

<sup>16</sup> The work of Pierre S. Laplace, a French astronomer and mathematician, is typical of determinism in its most extreme form. This point of view is reflected in his famous remark that if he knew the state of every particle in the universe at any given moment, he could predict the future course of events throughout eternity.

<sup>17</sup> *Ibid.*, p. 793.

mined rate in accordance with a fixed law of nature.<sup>18</sup> That Malthus should have assumed the law was absolute and universal is easily understood if one remembers that there were few precedents in either eighteenth-century philosophy or science for the admission of rates of change that were largely indeterminate. To admit that the growth of population might be culturally conditioned and thus vary in relation to both time and place, would have involved a sharp break with some fundamental assumptions of contemporary philosophy. Inspired by the successes of the natural sciences, philosophers were prone to assume the existence of precise and immutable laws of social behavior comparable to those of Newtonian physics. The felicific calculus of Bentham, for example, is probably a reflection of this influence. Be this as it may, the tradition in philosophy during this period was to regard the phenomena of both the physical and social worlds as either static and permanent or as changing in a rigid, deterministic pattern. Since many of the classicals were well-versed in philosophy, it would be strange indeed if the kinds of analytical tools they used were not affected to some extent by prevailing philosophical ideas.

What is being suggested should not be misconstrued. One hundred and fifty years ago, someone might have formulated a theory that population has a tendency to grow at some other rate than a geometric one, but that assumed rate would nevertheless have been viewed as one fixed and predetermined by a universal law of nature. If Schumpeter's thesis, in effect, merely amounts to an assertion that the particular rate of growth specified in the Malthusian theory was not determined by philosophic preconceptions, it is little more than a truism. However, there is an important question whether, in the philosophic climate of opinion of the eighteenth century, any theory of population might have been expected to emerge which did not have the characteristics of determinism and universality. One indication of this may be found in the cool reception scientists gave William Godwin when he argued against the fatalistic idea that man's future would be largely dictated by implacable laws of nature.<sup>19</sup> In other words,

<sup>18</sup> All references are to the first edition (1798) of Malthus' *Essay on Population*. This is not to deny the importance of subsequent modifications of his original position, although the significance of these changes for the development of the analytical system of the classical economists, e.g., wage theory, the theory of economic development, etc. is open to a variety of interpretations. For a discussion of the confusion in classical wage theory, for example, which stems in part from different interpretations of the Malthusian population theory, see Frank Knight's discussion of the "subsistence" wage, the "standard of living" wage, etc. in "The Ricardian Theory of Production and Distribution," *Canadian Journal of Economics and Political Science*, May, 1935, I, pp. 190-95. In any event, such questions are largely extraneous to the basic problem with which the present paper is concerned.

<sup>19</sup> The adjective "fatalistic" is used advisedly, for the concept of natural law contained overtones of fatalism or "destiny" from the time of its initial introduction into Greek philosophy until the early decades of the present century. It is interesting to note that the origin of natural-law theory in early Greek philosophy has been traced to the concept of *moira* (fate) in Greek mythology. "Fate" symbolized the orderliness of nature, and the pre-Socratic philosophers went a step further in distinguishing between *physis*, that which was permanent and unchanging, and *nomos*, which referred to the changing phenomena of nature. And out of this distinction emerged the well-known Aristotelian contrast between the universal "laws of nature" and the "conventional" or man-made laws. For a detailed

all I am suggesting is that the philosophical assumptions of that period virtually precluded the acceptance of any theory of change other than a deterministic one.

Because of the space which Schumpeter devotes to what he calls the "natural-law philosophers," it may be appropriate at this point to interject some comments about the relationship of science and natural-law theory. Schumpeter emphasizes that, from an historical point of view, the term "natural law" had both an analytic and a normative or teleological connotation. When it was first introduced into Greek philosophy, for example, the concept of natural law was associated with the search for order or regularities in nature. And Schumpeter's statement that "social science discovered itself in the concept of natural law"<sup>20</sup> is probably valid when considered in such a context. However, this analytic aspect of natural-law doctrine was rarely, if ever, divorced from certain metaphysical characteristics which vitiated some of its usefulness for modern science. Although Schumpeter recognizes these metaphysical features, his interpretation of their significance for the development of economic analysis raises some interesting interpretative questions.

If I understand his position correctly, Schumpeter argues that historians of economic thought have almost universally exaggerated the importance of natural-law theory because of their failure to separate the normative and analytic aspects of the theory. He apparently holds that the normative facet of natural-law doctrine is relatively unimportant because it consists of nothing more than value judgments about the analytic or "scientific" part of the doctrine. Moreover, the normative natural law is said to be both logically and "practically" distinguishable from that which is purely analytic.

*The normative natural law presupposes an explanatory natural law.* The former is nothing but a particular kind of value judgment passed upon the facts and the relations between facts unearthed by the latter. The two are logically as distinct and practically as distinguishable as are the value judgments and analytic propositions of any economist.<sup>21</sup>

Most economists would probably agree that the normative part of natural law has been a source of much confusion throughout the history of our discipline. For example, medieval doctors frequently condemned the charging of interest on loans as a violation of the laws of nature, whereas by the time of the seventeenth century numerous writers were appealing to the same laws as a justification for the payment of interest rates set in a free market. Again, Aristotle approved of slavery because it was ostensibly in accord with a universal law of nature, but John Locke appealed to the same authority in justifying human

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study of the origin of these and related terms, see Francis Cornford, *From Religion to Philosophy* (London: Edward Arnold, 1912), pp. 1-72. In his book, *Science and the Modern World* (New York: The Macmillan Company, 1925), Alfred N. Whitehead has developed the thesis that "fate" in Greek Tragedy has become the order of nature in modern thought. Eg.: "This remorseless inevitableness is what pervades scientific thought. The laws of physics are the decrees of fate" (p. 15). Much the same characterization would be appropriate if applied to the Malthusian law in its original and most rigorous form.

<sup>20</sup> Schumpeter, *op. cit.*, p. 112.

<sup>21</sup> *Ibid.*, p. 111.

freedom. The entire history of economic and social thought is replete with such illustrations, all of which demonstrate that normative natural-law theory has been "all things to all men." In the words of Schumpeter, it is a "most common occurrence that people who hold different views, nevertheless recognize, and appeal to, the same authority."<sup>22</sup>

But all this is surely obvious to any student of the history of economic thought. What is more important is that the belief in the laws of nature, even in a purely analytic sense, narrowly circumscribed the types of "tools and theorems" which social scientists used. It entailed, from the time of early Greek science and philosophy, an acceptance of absolutes which had important implications for scientific methodology.<sup>23</sup> And few would deny that the deterministic view of social change was derived from the ancient belief in absolute and universal laws of nature. In this respect, therefore, philosophic preconceptions may have influenced the selection of what Schumpeter calls the tools and theorems of early economists, even though the specific content of any particular theory could not necessarily be attributed to the influence of philosophy.

The classical theory of resources offers another illustration of what may be called a static analysis. In their theory of economic development, classical economists usually assumed that so-called natural resources remain constant over long periods of time. For example, Ricardo neither devoted attention to the possibility of increasing the supply of natural resources nor discussed problems involving the depletion of mineral resources, soil exhaustion, etc.<sup>24</sup> What the classicals chose to regard as the "niggardliness of nature" was ostensibly responsible for each nation being endowed with a fixed "bundle" of resources which, used in conjunction with a growing population and a somewhat modest rate of technological progress, resulted in secular diminishing returns. This static approach to the natural-resource problem obviously played an important role in the Ricardian theory of the stationary state and thus lent support to his rather pessimistic views concerning future economic growth.

If we digress for a moment to consider the opposite, or "functional," theory of resources, an entirely new way of thinking about natural resources presents

<sup>22</sup> *Ibid.*, p. 113. Schumpeter bitterly attacks those who have rejected economic theory on the grounds that "it is nothing but an offshoot of unscientific natural-law philosophies" (p. 110). In doing this, economists have ostensibly been guilty of "throwing out the analytic baby with the philosophic bath-water" (p. 111). Such criticism may indeed be merited. What is attempted in the present paper, however, is not to throw away the baby but rather to raise some questions about its parentage.

<sup>23</sup> It is perhaps worth noting that the influence of philosophy on the analytical tools of science, which Schumpeter denies so vehemently in the case of economics, has not only been widely acknowledged, but even emphasized, by prominent men in the area of the physical sciences. For example, the most distinguished physicist of modern times, Albert Einstein, has described how his work was affected by the philosophy of David Hume and Ernest Mach. See his "Autobiographical Notes" in *Albert Einstein: Philosopher-Scientist*, ed. Paul A. Schlipp (Evanston: The Library of Living Philosophers, Inc., 1949), p. 53. Other essays in this volume, e.g., Philipp Frank's "Einstein, Mach, and Logical Positivism," contain excellent analyses of the influence of philosophy on modern physics.

<sup>24</sup> For a discussion of this point, see W. C. Mitchell, *op. cit.*, Vol. I, p. 165.

itself. The work of Erich Zimmermann is an excellent example of the new approach which abandons the classical "bundle" or "stockpile" view of the natural resource problem.<sup>25</sup> In an important sense, natural resources are now considered to be a function of science and technology. Resources are thus created in the only sense that man can create anything, i.e., by rearranging and utilizing more efficiently what he finds in nature. Needless to say, this leads to a more optimistic view of economic progress than does the Ricardian theory.

Whether the essentially static world view inherited from ancient philosophy influenced the classicals in their thinking about natural resources is, of course, a question to which no definitive answer can be given. In this general context, however, a somewhat more direct influence of philosophy has been suggested by Alfred N. Whitehead. His position is that the conception of a "fixed environment" stemmed from the acceptance of a philosophy which was predominantly materialistic. Although the following excerpt does not refer specifically to the term "natural resources," it is apparent that Whitehead is discussing a broad problem which encompasses the theory of natural resources:

The materialistic philosophy emphasized the given quantity of material, and thence derivatively the *given nature* of the environment. It thus operated most unfortunately upon the social conscience of mankind. For it directed almost exclusive attention to the aspect of struggle for existence in a *fixed environment*.<sup>26</sup>

As Whitehead observes, there are really "two sides to the machinery involved in the development of nature."<sup>27</sup> On the one hand, environment may be treated as a given datum, with organisms adapting themselves to it. This is, of course, the aspect of the problem which received greatest emphasis by the classical economists in their population and natural-resource theories. But there is another facet of the relationship between man and nature which focuses attention on the important fact that "organisms can create their own environment."<sup>28</sup> According to Whitehead, failure to recognize the importance of this "creative" side of the evolutionary process probably accounts for much of the intellectual confusion about man's relation to his environment.<sup>29</sup>

In the immediate past, and at present, a muddled state of mind is prevalent. The increased plasticity of the environment for mankind, resulting from the advances in scientific technology, is being construed in terms of habits of thought which find their justification in the theory of a fixed environment.<sup>30</sup>

Whitehead is thus convinced that the materialistic philosophy which pre-

<sup>25</sup> Erich Zimmermann, *World Resources and Industries* (New York: Harper & Bros., 1951), pp. 3-11.

<sup>26</sup> A. N. Whitehead, *op. cit.*, pp. 287-88. (Italics are mine).

<sup>27</sup> *Ibid.*, p. 157.

<sup>28</sup> *Ibid.*, p. 158.

<sup>29</sup> As used above, the word "creative" should not be construed to have overtones of "vitalism." More specifically, its use in this context is not meant to imply a relationship to the theory of "creative evolution" associated with the name of Henri Bergson, for Whitehead rejects most of the so-called "anti-intellectualism" of Bergson's philosophy.

<sup>30</sup> *Ibid.*, p. 114.

veiled during the eighteenth and nineteenth centuries led social scientists to exaggerate the importance of the "fixed" character of natural resources, the so-called struggle for existence, etc.<sup>31</sup> That Malthus and Ricardo, for example, gave undue emphasis to these factors is surely apparent, and most students of philosophy would probably agree that a mechanistic, materialistic conception of the world lent support to these static views.

The question arises, therefore, whether some recent changes in the content of philosophy may have been instrumental in the abandonment of views such as those previously discussed. In offering an affirmative, though admittedly tentative answer, I suggest that an inquiry into the influence of Darwin's work on modern philosophy might prove fruitful. This influence, of course, manifested itself in so many different ways that it would be difficult to give a brief, yet adequate, summary of its impact on philosophy. For present purposes, however, attention need only be directed to one of these effects, which Cecil Dampier, in his *History of Science*, calls the destruction of "the idea of finality."<sup>32</sup> The implications of this were of profound importance, for the concepts of "process," "organism," and of constant change involving the emergence of new forms, led to the abandonment in philosophy of the traditional world of absolutes.<sup>33</sup> The net result of all this is that we no longer regard anything in nature as fixed or permanent. As a consequence, the static view of resources, for example, is not meaningful to us when used in the analysis of problems relating to economic growth and development. By the same token, the functional theory is perhaps acceptable partly because it is free of overtones of finality and determinism.

But the impact of an "evolutionary" philosophy has had ramifications which extend beyond the more limited problems of resource and population theories. Evidence of this may be found in one of Schumpeter's latest works, *Capitalism, Socialism and Democracy*, which illustrates quite clearly the manner in which this new perspective concerning the nature and importance of change affected his analysis of the whole capitalist process. And more importantly for

<sup>31</sup> To characterize the philosophy of these two centuries as "materialistic" is not to deny the fact that numerous dissenters challenged the prevailing views. The work of Bishop Berkeley may be cited as an outstanding illustration of such dissent. It is nevertheless true that the idealism of Berkeley and his followers lies outside the main stream of philosophic thought during the eighteenth and nineteenth centuries.

<sup>32</sup> Cecil Dampier, *A History of Science* (New York: The Macmillan Company, 1944), p. 331.

<sup>33</sup> Although the impact of developments in theoretical physics on the philosophical concept of change has not been mentioned, I do not wish to imply that this factor is unimportant. On the contrary, the influence of biology and physics actually converged in at least one important respect, for in both disciplines the world began to be viewed as an *organism*. The notion of mass, for example, lost much of its historical importance for physicists because the relations of mass and energy became inverted. And this in turn led to the idea of energy being fundamental, thus displacing matter from its dominant position. But energy is "merely the name for the quantitative aspect of a structure of happenings; in short, it depends on the notion of the functioning of an organism" (Whitehead, *op. cit.*, p. 144). However this may be, the biological theory of evolution was selected for emphasis primarily because it was the first of the major "break-throughs" in science which had the effect of placing philosophic determinism and materialism on the defensive.

the topic under discussion, it provides an excellent example of how certain types of analytical tools have been discarded, and others adopted, as a direct result of accepting the so-called evolutionary point of view.

Schumpeter insists that no appraisal of the performance of capitalism is meaningful if it ignores the basic fact that "in dealing with capitalism we are dealing with an evolutionary process."<sup>34</sup> Traditional economic theory is, therefore, condemned for having presented only a "fragmentary" analysis which fails to give proper consideration to the pervasive character of evolutionary change. This type of change results from such factors as the introduction of new forms of industrial organization, new technology, and new markets. "The opening up of new markets . . . and the organizational development from the craft shop and factory to such concerns as U. S. Steel illustrate the same process of industrial mutation—if I may use that biological term—that incessantly revolutionizes the economic structure *from within* . . ."<sup>35</sup> His view of the functioning of the capitalist process is analogous to the biological conception of change in an organism.

First, since we are dealing with a process whose every element takes considerable time in revealing its true features and ultimate effects, there is no point in appraising the performance of that process *ex visu* of a given point of time; we must judge its performance over time, as it unfolds through decades or centuries. . . . Second, since we are dealing with an organic process, analysis of what happens in any particular part of it—say, in an individual concern or industry—may indeed clarify details of mechanism but is inconclusive beyond that. Every piece of business strategy acquires its true significance only against the background of that process and within the situation created by it.<sup>36</sup>

Schumpeter's position, therefore, is that economic change is the most important distinguishing feature of capitalism, and any body of theory which examines economic data at a given point in time, and interprets the performance of the system solely on the basis of such data, is of necessity distorting the true nature of the capitalist process. In other words, how capitalism administers existing economic structures is comparatively unimportant, for "the relevant problem is how it creates and destroys them."<sup>37</sup> Moreover, an examination of the various contexts in which Schumpeter uses such terms as "organism," "process," and "mutation" reveals that his analysis is singularly free of the older mechanistic and deterministic concepts of change.

Finally, Schumpeter is obviously convinced that such an evolutionary approach diminishes the importance of some traditional analytical tools associated with the theory of competition. Thus he argues that the price variable must be "ousted from its dominant position" because of the decisive role played by quality and product competition, sales effort, etc.<sup>38</sup> In brief, what he visualizes as the "process of creative destruction" ostensibly requires the use of a new

<sup>34</sup> J. A. Schumpeter, *Capitalism, Socialism, and Democracy* (New York: Harper & Bros., 1942), p. 82.

<sup>35</sup> *Ibid.*, p. 83.

<sup>36</sup> *Ibid.*, pp. 83-84.

<sup>37</sup> *Ibid.*, p. 84.

<sup>38</sup> *Ibid.*

set of tools and theorems which will permit economists to deal more realistically with the problem of monopolistic pricing.

It would appear, therefore, that Schumpeter's basic assumptions concerning both the nature and importance of change exerted an important influence on his economic analysis, i.e., they affected his selection of "tools and theorems." The extent to which these assumptions were derived from his philosophical views, however, presents a question to which no unequivocal answer can be given. The above comments about Schumpeter's analytical system nevertheless indicate there are fundamental similarities between the modern philosophical conception of change and that to which Schumpeter subscribed. Furthermore, there can be no question about Schumpeter's familiarity with philosophic literature. These "facts," of course, do not constitute "proof" of the influence of philosophy on his economic analysis. I do suggest, however, that such evidence raises questions which merit the attention of those who are interested in the developmental aspects of economic thought.

In concluding these brief remarks, at least one "negative" point deserves repetition. No allegation has been made that any specific analytical tool used by economists was extracted from philosophy. Classical population and resource theories, for example, were not "borrowed" directly from philosophy.<sup>39</sup> I have only tried to indicate that the selection of tools and theorems by classical economists was, in some respects, narrowly circumscribed by virtue of certain philosophical preconceptions which were widely accepted during that period. Similarly, the so-called evolutionary approach, which Schumpeter regards as a distinguishing feature of his own analytical system, does not dictate the use of any specific analytical tool, although it does lead to the use of new *types* of tools. It is in this sense, therefore, that philosophy may have "shaped" economic analysis.

Schumpeter presents the basic issue quite clearly when, referring to the period

"Thus Schumpeter was probably correct in saying it would be "nothing short of ridiculous to aver that economists allowed philosophers to teach them their business when they were investigating the conditions in domestic industry, or railroad rates or trust problems of their time..." (*History of Economic Analysis*, p. 780). But the major issue is surely not a matter of determining whether philosophers taught economists "their business" in such a narrow sense. On the contrary, whatever influence philosophy may have had was typically exerted in a more indirect manner, e.g., by limiting the choice of tools which would be regarded as acceptable for analytical purposes.

Some historians of economic thought might argue, however, that a few of the economists' analytical tools have been extracted directly from philosophy. Jevons, for example, readily admitted that he was indebted to Bentham for the hedonic calculus. In discussing this point, Schumpeter does not deny the direct influence of Bentham's philosophy, but he does insist that all the utilitarian hypotheses are mere "frills" which can be discarded without in any way affecting the validity of the analytical work done by such men as Jevons and Edgeworth. Another, and possibly more important, instance of such direct influence may be found in the ends-means dichotomy, which was handed down intact from philosophy to economics. The use of this dichotomy in welfare economics has only recently begun to receive the critical attention that it probably deserves. For a discussion of this problem, see Paul Streeten, "Programs and Prognoses," *The Quarterly Journal of Economics*, Aug. 1954, LXVIII, No. 3.

from 1870 to 1914, he says: "No philosophy can be proved to have influenced the economists of the period in the sense that they arrived at or failed to arrive at any analytic conclusions which they would not have arrived at or failed to arrive at without guidance from any philosopher..."<sup>40</sup> His central thesis is that a similar verdict must be given for the entire history of economic analysis. The intent of the present paper, however, has been to question whether the filiation of scientific ideas in economics is as self-contained, or autonomous, as Schumpeter implied.

<sup>40</sup> Schumpeter, *History of Economic Analysis*, p. 779.

## INTEREST RATES AND TOTAL SPENDING

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### I. THE PARADOX

Macroeconomic theories generally accord the interest rate some influence on the total volume of spending and so on production, employment, and price levels. But when we examine this influence, we run into some paradoxical contradictions. On the one hand, a low interest rate is supposed to stimulate investment while possibly, though less surely, discouraging saving in favor of consumption; a high interest rate is supposed to have opposite effects.<sup>1</sup> On the other hand, the interest rate measures the opportunity cost of holding a cash balance by way of interest earnings sacrificed. The lower this cost, the more cash a typical firm or individual is likely to decide to hold at any given level of income or transactions. The higher the interest rate, the smaller are the cash balances demanded relative to income or transactions. In short, a low interest rate tends to slow down and a high interest rate to speed up the income and transactions velocities of money.<sup>2</sup>

According to the saving-and-investment approach, then, a low interest rate stimulates and a high interest rate restrains the total flow of spending. But according to the velocity-of-money approach, a low interest rate restrains spending and a high interest rate stimulates it.

A slightly different way of looking at the matter underlines the paradox. Simple mental experiments show that a low interest rate increases the attractive-

<sup>1</sup> Classic statements of an inverse relation between the interest rate and the total flow of spending are found in Knut Wicksell, *Interest and Prices* (translated by R. F. Kahn; London: Macmillan, 1935), especially chapters 7 through 9, and in the Keynesian system, which makes investment spending dependent on the relation between the marginal efficiency of capital and the rate of interest. See, also, the references below to Don Patinkin, *Money, Interest, and Prices* (Evanston: Row, Peterson, 1956.)

<sup>2</sup> Emphasis on the relation between interest rates and the demand for cash balances is supposed to be a major contribution of Keynes's *General Theory*, though the relation had been recognized long before. See, for example, the references to Marshall, Pigou, and Mises in Howard S. Ellis, *German Monetary Theory, 1905-1933* (Cambridge: Harvard University Press, second printing, 1937), pp. 163, 191, and the citations of Walras, Schlesinger, Lavington, and Fisher in Patinkin, *Money, Interest, and Prices*, pp. 389, 416, 418-19. See also Wicksell, *Interest and Prices*, p. 119; Wicksell, *Lectures on Political Economy* (London: Routledge and Kegan Paul, third impression, 1950), II, p. 197; M. W. Holtrop "Die Umlaufgeschwindigkeit des Geldes," in Friedrich A. Hayek, editor, *Beiträge zur Geldtheorie* (Vienna: Springer, 1933), pp. 164-65, 173; Tjardus Greidanus, *The Value of Money* (London: Staples, 1932; second edition—cited here—1950), especially pp. 242, 261, 267, 273-74, 278, 280, 314, 317, 323; and John Maynard Keynes, *A Treatise on Money* (London: Macmillan, 1930), II, pp. 44-45. Recognition of the interest-velocity relation has been quite common since the *General Theory*. See in particular Richard T. Selden, "Monetary Velocity in the United States," in Milton Friedman, editor, *Studies in the Quantity Theory of Money* (Chicago: University of Chicago Press, 1956), pp. 177-257; this study purports, however, to find little statistical evidence that interest rates have a strong influence on velocity.

ness of either holding money idle or spending it on goods and services relative to the attractiveness of lending it out, as well as the attractiveness of borrowing money to spend it on goods and services or to hold it as a cash reserve. A high interest rate, conversely, decreases the attractiveness of holding money idle or spending it on goods and services relative to the attractiveness of lending it out and also decreases the attractiveness of borrowing money to spend it on goods and services or to hold it as a cash reserve. All these comparisons involve possible borrowing or lending. But, apart from its influence on the attractiveness of borrowing or lending, how does the interest rate affect people's choices between holding money idle and spending it on goods and services? A fall in the interest rate tends to encourage *both* cash-holding and expenditure on the part of the typical firm or household (these two shifts being financed by a reduction in intended lending or an increase in intended borrowing); but it is not obvious whether cash-holding or expenditure is likely to be stimulated more. A rise in the interest rate, conversely, tends to discourage *both* cash-holding and expenditure (these two shifts being matched by an increase in intended lending or a reduction in intended borrowing); but it is uncertain whether cash-holding or expenditure is discouraged more. Yet the state of people's preferences as between holding cash idle and spending it on goods and services—a state of preferences upon which the interest rate has such a doubtful influence—seems to be the crucial determinant of the aggregate volume of spending out of a given money supply.

Clearly, then, no simple inverse relation exists between the level of the interest rate and the flow of monetary demand for goods and services. Yet Don Patinkin—to mention the most important recent example—makes extended use of such a supposed relation. Consider, for example, the "CC" curve in Figures 18 and 26 (pages 155 and 177) of his *Money, Interest, and Prices*.<sup>3</sup> This curve represents the locus of all pairs of interest-rate and commodity-price levels that just maintain equilibrium between supply and demand in the market for commodities-in-general. The curve slopes downward from left to right, showing that the higher the price level, the lower the interest rate necessary for equilibrium, and vice versa. The reason for this inverse association is that a high price level means a low real purchasing power of cash balances, which tends to overrestrict the demand for commodities, unless a low interest rate provides an offsetting stimulus to the demand for commodities. On the other hand, a low price level means a high real purchasing power of cash

<sup>3</sup> In his review article, William Fellner describes Patinkin's "CC" curve with no suggestion that it might be wrong. "Patinkin's Integration of Monetary and Value Theory," *American Economic Review*, December 1956, XLVI, p. 954 and footnote. Essentially the same error as in Patinkin's "CC" curve underlies J. R. Hicks's "SI" curve in "Mr. Keynes and the 'Classics': A Suggested Interpretation," *Econometrica*, V (1937), reprinted in American Economic Association, *Readings in the Theory of Income Distribution* (Philadelphia: Blakiston, 1946), p. 469.

No criticism of Patinkin is implied in using a minor slip by him as an example of generally-prevalent confusion. On the contrary, the present paper is deeply indebted to Patinkin's brilliant book.

balances, which tends to over-stimulate the demand for commodities, unless a high interest rate provides an offsetting restraint. The aspect of this analysis at issue in the present paper is the unquestioning acceptance of a low interest rate as a stimulus and a high interest rate as a check to the flow of spending on commodities.<sup>4</sup>

## II. CONDITIONS ACCOUNTING FOR A PARTICULAR INTEREST-RATE LEVEL

The essential error lies in considering the effects of a given interest rate or of a given change in the interest rate as such instead of considering the effects of the change in the data of the situation of which the change in the interest rate is just one aspect or to which it is just one of the responses. After all, the "effects" of a change in the interest rate are likely to be different according to what caused the change. Unless these causes are specified, it is just as meaningless to inquire about the effect of an arbitrary change in the interest rate as it would be to inquire about the effect of an arbitrary change in the price of wheat on the volume of trading in wheat. The inquiry is meaningless unless we know whether the price has dropped in response to an increase in supply, a decrease in demand, or a governmental directive. Meaningless inquiries of this sort sometimes arise from a failure to distinguish between what Patinkin calls "individual-experiments" and what he calls "market-experiments."<sup>5</sup> For example, mental experiments on the behavior of individual firms and households suggest that a reduced interest rate will increase their willingness to invest and perhaps even their willingness to consume rather than save. But can increased investment actually be financed and undertaken if an increased volume of saving is not made available on the loan market? Answers to such questions involve considering what may have disturbed the original market equilibrium and involve tracing out how the market will react in moving toward a new equilibrium.

Explicit—or, too often, only implicit—in most discussions about the expansionary effect of a low interest rate is an increase in the money supply. A low interest rate is indeed expansionary if it stimulates the volume of bank loans demanded and if the banks satisfy this demand for loans by creating new checking accounts. Similarly, a low interest rate resulting from official open-market security purchases can have an expansionary effect in encouraging investment and possibly in discouraging saving in favor of consumption. In both these cases, however, it promotes clarity to attribute the expansionary effect not so much to the interest rate itself as to the increased supply of money made available, initially, on the loan market.

<sup>4</sup> In sector IV of Patinkin's Figure 18 (p. 155), the interest rate is too low for equilibrium in the commodity market, so that more commodities are being demanded than supplied, while at the same time the interest rate is also too low for equilibrium in the bond market, so that more loans are being demanded than supplied. But how can a low interest rate be such a stimulus to the demand for commodities if it is not an equilibrium rate at which loans can be readily obtained?

<sup>5</sup> *Op. cit.*, especially pp. 15, 44–45, 275–81. It is ironic that Patinkin, in discussing the interest rate, sometimes fails to keep his own distinctions fully in mind.

As Wicksell emphasizes, a particular level of interest rates—or, to be precise, the associated money-supply conditions—may be expansionary not because of an actual lowering of interest rates but because of a failure of market rates of interest to rise fully in step with the “natural rate of interest.”<sup>6</sup> This means, roughly, that the actual rate of interest charged to borrowers may fail to rise in step with the expected rate of return on investment expenditures as the latter rate rises in a period of prosperity and business optimism. The expansionary effect lies not so much in the lag of the market rate of interest behind the natural rate, however, as in satisfaction of the resulting demands for credit by creation of new money.

In the converse cases—a rise in the interest rates charged by banks, a rise in interest rates because of official open-market security sales, or a failure of market interest rates to fall in step with worsening profit expectations—the restrictive effect should be attributed not so much to the level of the interest rate itself as to the accompanying shrinkage of the money supply (or restriction on its expansion).

More complex is the analysis of what may cause the level of interest rates to change when the money supply stays fixed. This analysis brings out most clearly the effect on velocity of interest-rate changes. Suppose that, given a fixed money supply, people become more thrifty. Out of any given income, they want to spend less on goods and services than before in order to build up their holdings of liquid assets. We do not suppose, however, any autonomous shift in people's preferences between money on the one hand and bonds (or other interest-bearing assets) on the other hand.<sup>7</sup> Accordingly, people will want to hold their increased savings partly in larger cash balances and partly in additional bond-holdings. The latter means an increase in the supply schedule of loans, tending to bid down interest rates and so stimulate borrowing (or moderate a decline in borrowing) for investment or other spending. However, the entire amount of any increase in saving would not be lent out, especially since the fall in the interest rate represents a fall in the opportunity cost and therefore a rise in the attractiveness of holding idle cash. In fact, even borrowers might not use the entire amount of their borrowings for additional expenditure, now that the decline in interest rates has reduced the cost of holding more adequate cash reserves. In short, the initial increase in thriftiness, reinforced by the resultant drop in interest rates, leads to an increase in hoarding—that is, to a decline in the velocity of money—and so, given the fixed money supply, to a shrinkage in aggregate spending and money income. As the Keynesian “paradox of thrift” makes clear, the increased propensity to save will probably not even result in an increased volume of actual saving.

In one sense, however, the decline in the interest rate has promoted total spending: it has made borrowing more attractive than it would otherwise have been. Artificial maintenance of the interest rate despite increased thrift by the decree of an arbitrary interest-rate floor would have interfered with getting

<sup>6</sup> *Interest and Prices*, chapters 8, 9, 11.

<sup>7</sup> Such shifts in liquidity preference are discussed later.

savers and borrowers together and so would have made the drop in total spending even worse. (The actual volume of loans—which get money into the hands of people prepared to spend it—is likely to be greater at the interest rate that equates supply and demand in the loan market than at any other rate, just as the volume of wheat traded is likely to be greater at the price that equates supply and demand in the wheat market than at any other price.) Keeping the interest rate artificially up would not have correspondingly discouraged hoarding and sustained velocity because, in view of the difficulty of finding borrowers at that disequilibrium rate, it would not have accurately measured, but rather would have overstated, the opportunity cost of holding cash balances.

Now let us suppose that the interest rate drops not because of increased thrift but because of a decline in the demand schedule for loans owing to a decline in the expected profitability of investment. The decline in the volume of loans will not be fully matched by a decline in saving out of a given level of income on the part of lenders. Part of the decrease in loans will be matched, instead, by an increase in hoarding, especially since the fall in interest rates represents a decreased opportunity cost of cash balances. Hence, the initial decrease in the attractiveness of investment, reinforced by lower interest rates, has resulted in a decline in velocity and in aggregate spending. Still, the fall in the interest rate has stimulated spending in the sense that it has tended to mitigate the decline in actual borrowing for investment purposes. Artificially keeping up the interest rate would have interfered with getting savers and investor-borrowers together without correspondingly sustaining velocity, since a disequilibrium interest rate at which borrowers are hard to find is not a true measure of the interest sacrificed in holding idle cash.

Next suppose that the interest rate rises because a decrease in thrift reduces the supply of loans. The actual volume of loans will probably not decline fully as much as the volume of saving. The cut in saving will be only partly at the expense of lending and partly at the expense of hoarding, especially since the rise in the interest rate represents an increase in the opportunity cost of holding idle cash. Hence the decrease in thrift brings about an increase in the velocity of circulation of a given money supply. As the Keynesian analysis shows, the decline in the propensity to save need not lead to a reduction in the actual volume of saving; if incomes rise enough, actual saving may even increase.

In this case the rise in the interest rate has promoted the rise in aggregate spending; for arbitrarily preventing it would have interfered with getting borrowers and lenders together and would have checked the rise in the velocity of money by constituting a partial<sup>a</sup> ceiling on the opportunity cost of holding money idle.

If the interest rate were bid up by an increase in the attractiveness of loan-

<sup>a</sup> An arbitrary ceiling on the interest rate would keep down the interest sacrificed in holding cash idle, which is probably the most important measure of the opportunity cost, but it would not keep down the opportunity cost represented by the psychic or pecuniary yield of expenditure on consumer or capital goods.

financed investment spending, the increased volume of loans would not be provided entirely by increased saving out of a given level of income. It would be provided partly by dishoarding, especially since the rise in the interest rate represents an increased opportunity cost of cash balances. Hence velocity, aggregate spending, and money income all rise. The rise in the interest rate has promoted this rise in the sense that arbitrarily preventing it would have constituted an obstacle to getting borrowers and lenders together<sup>9</sup> and a partial ceiling on the opportunity cost of idle cash.<sup>10</sup>

Now let us suppose that the money supply, the propensity to save, and the attractiveness of investment expenditure all stay initially unchanged. However, people's preferences about the form in which they wish to hold their savings—in other words, their preferences between bonds and money—do change. First, suppose that people become less willing to hold money and more willing to hold bonds. This constitutes an increased supply of loans, which bids down the rate of interest and so tends to stimulate borrowing and spending for investment. The initial decline in liquidity preference thus leads to a rise in velocity and total spending. Though the fall in the interest rate and thus in the opportunity cost of cash balances tends to restrain this rise in velocity, it could hardly prevent it completely, for that would presuppose an incredibly high interest-elasticity in the demand for cash balances. (Such an incredible supposition would be akin to supposing that a fall in the demand for wheat cannot lead to any fall in total purchases of wheat, since the accompanying fall in the price of wheat would so greatly stimulate buying.) If the interest rate had been arbitrarily kept from falling as people tried to shift out of cash into bonds, this obstacle to getting borrowers and lenders together would have impeded the rise in aggregate spending. The artificially maintained interest rate would not have been much of a spur to velocity because, considering the difficulty of finding borrowers at that rate, it would not have been a true indicator of the opportunity cost of holding money idle.

Now suppose an opposite shift in preferences, away from bonds and in favor of cash balances. This decline in the supply of loans raises interest rates and reduces the actual volume of loans for and spending on investment. The initial rise in liquidity preference thus leads to a fall in velocity and in total spending. Though the rise in the interest rate and thus in the opportunity cost of cash balances tends to restrain this fall in velocity, it could hardly prevent it completely, for that would presuppose an incredibly high interest-elasticity in the demand for cash balances. An arbitrary ceiling on the interest rate as people tried to shift out of bonds into cash would further worsen the drop in aggregate spending both by presenting an obstacle to getting borrowers and lenders together and by constituting an impediment to the rise in the oppor-

<sup>9</sup> Compare recent discussions about how the 4½-per cent interest ceiling on VA-guaranteed mortgages tends to restrict the availability of such mortgage loans.

<sup>10</sup> For at least some persons and firms, investing money in capital goods is an alternative both to lending money out and to holding money idle. Therefore, the assumed initial rise in the attractiveness of investment is in itself a rise in the opportunity cost of idle cash.

tunity cost of holding cash balances that would otherwise have somewhat restrained hoarding.

The last two examples show that shifts in people's preferences about the mere form in which they want to hold their savings can make interest rates change, even though the propensity to save and the attractiveness of investment remain unchanged.<sup>11</sup> At first sight this result seems to contradict the classical "productivity-and-thrift" explanation of interest. The reconciliation lies in seeing that in a monetary economy, the "reward" (or perhaps "rent") for saving (or "waiting" or "abstinence") consists partly of explicit payments and partly of implicit advantages. The "reward" for saving in the form of cash is entirely implicit, consisting of the various well-known advantages of liquidity. The "reward" for savings lent out is a composite of the explicit interest on the bonds or other obligations issued by the debtor and of the quasi-liquidity provided by the marketability of the bonds.<sup>12</sup> The less "moneylike" the bonds are, the larger is the explicit-interest component and the smaller the liquidity-advantage component of the composite "reward" to the saver. Now, a shift in savers' preferences from bonds to cash implies a relative decrease in the subjectively-appraised implicit quasi-liquidity yield on bonds. If the composite of explicit plus implicit yield on bonds is to remain in some sense unchanged (as classical interest theory leads us to expect if there has been no change in "productivity and thrift"), then there must be a rise in the explicit interest yield to compensate for the fall in the subjective yield. Conversely, a shift in savers' preferences from cash to bonds, implying a relative rise in the subjective yield on bonds, calls for a compensating fall in the explicit interest yield. Incidentally, as Patinkin points out, a technical change in the nature of bonds which in some way makes them more liquid—more readily convertible into money—is analytically equivalent to this shift in preferences from money to bonds.<sup>13</sup> This fact is not necessarily an argument for encouraging the issue of highly liquid securities to finance investment projects at low interest rates, however, for account must be taken of a resulting tendency toward inflationary repercussions.<sup>14</sup>

### III. EQUILIBRIUM AND DISEQUILIBRIUM

Having considered several possible causes of a change in the interest rate, we are now able to make some generalizations. If we consider the effect of the interest rate in terms of the saving-and-investment approach, we see that what matters is not so much the actual level of the interest rate as whether the rate is at an equilibrium or disequilibrium level. The rate at which the volume of loans supplied equals the volume of loans demanded is the rate that

<sup>11</sup> Patinkin's diagrammatic apparatus (*op. cit.*, especially pp. 168-171 and more particularly the discussion of non-"neutral" shifts in liquidity preference) will yield the same conclusion.

<sup>12</sup> Greidanus, *op. cit.*, pp. 313-18, rather vaguely alludes to the possibility of the yield on bonds being such a composite.

<sup>13</sup> *Op. cit.*, p. 170.

<sup>14</sup> See my "Low-Cost Financing of Hydroelectric Projects," *Public Utilities Fortnightly*, 22 November 1956, LVIII, pp. 809-14.

maximizes the actual volume of loans consummated and therefore, presumably, maximizes the transfer of money into the hands of those people most prepared to spend it. A below-equilibrium interest rate would increase the volume of loans demanded but decrease the volume of loans supplied and thus decrease the actual volume of loans; an above-equilibrium interest rate would increase the volume of loans supplied but decrease the volume of loans demanded and thus also decrease the actual volume of loans. The traditional view that low interest rates are expansionary and high interest rates restrictive at least implicitly presupposes—remember—an expansion or restriction of the quantity of new money being made available, initially, on the loan market.

Now let us consider the effect on the demand for cash balances—on velocity—of interest rates at, below, and above the equilibrium level that equates the demand for and supply of loans. As compared with the equilibrium interest rate, an interest rate that is accidentally or arbitrarily kept too low does partially<sup>15</sup> keep down the opportunity cost of holding cash and so keep down velocity. Both from the saving-and-investment and velocity viewpoints, then, a below-equilibrium rate of interest tends to keep down the flow of aggregate spending. An above-equilibrium rate of interest does not, in comparison with the rate that would equate supply and demand in the loan market, keep up the opportunity cost of holding cash as much as the mere percentage figure would superficially indicate; for, given the difficulty in finding borrowers at that rate, it does not accurately indicate the interest sacrificed in holding a cash balance. Here we see an asymmetry between a below-equilibrium and an above-equilibrium rate of interest: too low a rate *does* (apart from the exception already mentioned) tend to keep down the opportunity cost of holding cash and therefore keep down the velocity of money, while too high a rate does *not* (except perhaps to a minor extent) tend to keep up the opportunity cost of holding money and therefore keep up velocity.

Putting together the foregoing considerations regarding the loan market and the demand for cash balances, we see that adjustment of the interest rate to its equilibrium value, whether this adjustment is upwards or downwards, tends in itself (as distinguished from the change in conditions calling for change in the equilibrium rate of interest) to stimulate the aggregate flow of spending. Any interference with attainment of the equilibrium interest rate tends to impede the aggregate flow of spending.

Again we see the stimulatory effect of a low interest rate as usually conceived to lie in the supply of new money on the loan market that has reduced the equilibrium rate of interest.<sup>16</sup> Perhaps a general failure fully to understand

<sup>15</sup> See footnotes 8 and 10 above.

<sup>16</sup> It may be quite true that the lowered interest rate may represent a merely partial and temporary equilibrium in the loan market, rather than an aspect of general equilibrium, and that a rise in prices or the physical volume of business or both will affect the supply of and demand for loans in such a way as to raise the interest rate again. (Cf. Patinkin, *op. cit.*, especially pp. 160-64, 257-60.) But this recovery of the interest rate will result from the very increase in aggregate spending whose relation with the initial drop in the interest rate this paper has sought to clarify.

this point, and a tendency rather to conceive of monetary policy mainly in terms of the interest rate as such, accounts for the widespread belief in the inefficacy of monetary policy, and especially in the inefficacy of an easy-money policy in stimulating demand for goods and services. After all, the low interest rate is simply one aspect of the process of getting new money into circulation. Again we must invoke Patinkin's distinction between individual-experiments and market-experiments. No doubt it is true that the typical individual businessman is rather unresponsive to the level of the interest rate in deciding upon the volume of his borrowing to finance investment. But if any considerable number of businessmen are responsive at all to the interest rate, an easy-money policy can succeed in getting *some* new money into circulation; and to the extent that spending this new money improves the general business climate, some *other* businessmen will want to borrow additional money for investment spending. These other businessmen would now want to borrow more money even at interest rates unchanged from the initial level and so, *a fortiori*, will want to borrow more now that new money is available at lower interest rates. Continued creation of new money to keep down interest rates could result in a Wicksellian "cumulative process".<sup>17</sup>

Now we must consider whether the effect of lower interest rates in lowering the opportunity cost of holding idle cash and so in lowering the velocity of money might be strong enough to neutralize the stimulus to aggregate spending provided by the accompanying addition to the money supply. (We may suppose the new money to be put into circulation either by an easy-money policy or by a government budget deficit.) In short, is it possible that an increase in  $M$  could work through the interest rate so to reduce  $V$  that  $MV$  increases very little or not at all?<sup>18</sup> This is highly unlikely, for it cannot be supposed that all the initial borrowers or other recipients of the new money are getting loans or otherwise acquiring money in order to hold the *entire* amounts permanently idle in their cash balances. Neither is it plausible to assume an extreme enough interest-elasticity in the demand for cash balances. Hence  $V$  will not go down enough fully to offset the increase in  $M$ .<sup>19</sup>

Incidentally, this discussion provides another opportunity to clarify the paradox with which this paper started out. A low interest rate *can* be both a stimulus to aggregate spending from the saving-and-investment viewpoint and a deterrent to aggregate spending from the velocity viewpoint. It is a stimulus so far as it is part of the process of lending new money into circulation; it is a deterrent so far as it represents a reduced opportunity cost of holding idle cash. And, as we have just argued, it is highly implausible that the velocity deterrent should fully outweigh the money-supply stimulus.

<sup>17</sup> *Interest and Prices*, especially pp. xxvi-xxvii, 100-01; Patinkin, *op. cit.*, pp. 425-33.

<sup>18</sup> The possibility of this happening, at least to some extent, has been raised by Walter S. Salant, "The Demand for Money and the Concept of Income Velocity," *Journal of Political Economy*, June 1941, XLIX, especially pp. 403-04, 409-10.

<sup>19</sup> Furthermore, as additional spending affects business activity and prices and thus affects supply and demand in the loan market so as to raise interest rates again, any interest-induced drop in the velocity of money will tend to reverse itself. See footnote 16 above.

We may now ask, conversely, whether an antiinflationary policy of cutting down the money supply or of restricting additions to it is likely to be frustrated because the accompanying high interest rates speed up the velocity of money. The answer is no—not completely. Though increased interest rates will somewhat raise velocity, it can hardly be supposed that they will make people want periodically to dishoard sums of money equal to what would otherwise have been added to the money supply. After all, the people who would otherwise have been borrowing or earning the periodic injections into the money supply would not have been doing so simply to hold the entire amounts idle in their cash balances; they would presumably have been carrying out expenditures that they could not otherwise have afforded; and, if less money is being made available to them, they will have less to spend.

#### IV. AN INTERPRETATION OF RECENT EXPERIENCE

The recent behavior of the American economy has been puzzling. Gross national product has continued to rise, with definite signs of price inflation appearing in the wholesale index during 1955 and in the consumer index during 1956. Yet the money supply has been failing to grow at its long-run trend rate and has in fact stayed practically constant since early 1955.<sup>20</sup> A monetary policy tight enough practically to prevent actual monetary expansion has apparently proved not tight enough to prevent moderate price inflation. Rising expenditures under a practically constant money supply imply rising velocity, of course; and this implication is directly confirmed by figures on the turnover of demand deposits.<sup>21</sup> What can explain this rise in velocity? Possibly, innovations or changes in long-run expectations or in people's attitudes have made expenditure more attractive and so have raised the demand for loans relative to the supply of loans, causing interest rates to be bid up. Certainly this has been observed in the United States since late 1954—a general rise in the interest rates on all sorts of debt. This increase in the opportunity cost of holding cash balances gives businesses, government units, and households a further incentive to economize on their holdings of cash relative to income or expenditure. Specifically, the high-interest incentive causes some economic units to finance by dishoarding some of the expenditure that they would otherwise have tried to finance by borrowing and causes lenders to make available on the loan market some of the money that they would otherwise have continued to hold idle.<sup>22</sup> Money thus circulates more rapidly by being drawn into the hands of

<sup>20</sup> The seasonally-adjusted total of demand deposits adjusted and currency outside banks (published monthly in the *Federal Reserve Bulletin*) rose by only  $\frac{3}{4}$  of one per cent from the end of April 1955 to the end of October 1956. Demand deposits plus outside currency rose only 1 per cent during the calendar year 1956.

Incidentally, the word "recent" and similar expressions are used from the standpoint of early 1957, when this paper was written.

<sup>21</sup> See "Money Supply and Velocity," Federal Reserve Bank of Kansas City, *Monthly Review*, December 1956, pp. 3-8, and "Harder Working Dollars," Federal Reserve Bank of Chicago, *Business Conditions*, September 1956, pp. 5-7.

<sup>22</sup> Cf. "The Squeeze on Corporate Liquidity," Federal Reserve Bank of Chicago, *Business*

those economic units most prepared to spend it. Perhaps this is what J. M. Keynes had in mind in writing that "... it is stringent conditions of credit which tend to increase velocity."<sup>23</sup>

A restatement may clarify the argument. Suppose that the expected marginal productivity of capital goods rises because of technological innovations or increased business optimism and that the subjective marginal advantages of consumer goods and services rise because of a change in consumer attitudes. This rise in the marginal yield of goods and services in general requires, for equilibrium, a corresponding rise in the marginal yield of cash balances. (The trend of this nonpecuniary marginal yield on cash balances is roughly measured by the trend of interest rates on loans, since people tend to equate the marginal yields on their resources used in various ways.) The marginal yield can be raised by making cash balances—*real* cash balances—relatively scarcer, which can be done either by a cut in the money supply, given the price level, or by a rise in the price level, given the money supply.

The rise in interest rates may have had another cause, related to those already suggested. To the extent that union pressures push up wage rates faster than "productivity" and that businesses try to "pass on" these higher costs in the form of higher prices, business operations and consumption become more expensive than before, thus tending to increase the demand for loans or reduce the supply of loans or both. Accordingly, interest rates go up and have the effects on velocity already described. The traditional quantity-theory critique of the "wage-price spiral" emphasizes that unemployment will suppress the spiral unless a supporting increase in the money supply occurs. We now see, however, that the spiral may "support" itself for a while by way of an interest-induced rise in velocity.<sup>24</sup>

These considerations do only slight damage, however, to traditional theory.

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*Conditions*, November 1956, pp. 11-16; "Savings Institutions Less Liquid," Federal Reserve Bank of Chicago, *Business Conditions*, January 1957, pp. 8-12; "Corporations Running Short of Cash?," *U. S. News & World Report*, 25 January 1957, pp. 101-05; "Making Money Work Harder," *Business Week*, 9 February 1957, pp. 112-18.

<sup>23</sup> *A Treatise on Money*, II, p. 46.

<sup>24</sup> Still other factors may have played a part in raising velocity. An expected long-run inflationary erosion of the dollar is in itself a cost of holding money. Elaboration of ways to buy on credit allows people to economize on transactions balances. (Cf. *U. S. News & World Report*, 19 October 1956, pp. 146-50.) Increasing quantities of "near-moneys" tend to reduce the demand for money proper. However, the last-mentioned possibility, at least, does not seem to be an important part of the explanation of recent price trends. There has been no marked acceleration recently in the growth trend of the money supply, broadly defined. The total of currency outside banks, demand and time deposits (excluding U. S. government deposits), and savings and loan shares grew by 9.0 per cent in the calendar year 1946, 4.2 per cent in 1947, 0.2 per cent in 1948, 1.2 per cent in 1949, 4.7 per cent in 1950, 5.9 per cent in 1951, 5.9 per cent in 1952, 4.5 per cent in 1953, 5.9 per cent in 1954, 5.0 per cent in 1955, and only 4.0 per cent in 1956. Sources: *Economic Report of the President* (Washington: U. S. Government Printing Office, January 1957), p. 165; *Savings and Loan Fact Book, 1956* (Chicago, United States Savings and Loan League, 1956), p. 12; and, for the figure on savings and loan shares at the end of 1956, *Wall Street Journal*, 13 February 1957, p. 1.

It can hardly be supposed that the interest-rate-and-velocity mechanism can go very far as an automatic substitute for monetary expansion in "supporting" a wage-price spiral or any other nonmonetarily-induced upward spiral of spending. The money supply remains the major determinant of the total flow of spending, as may be seen by considering what would have happened if an expansionary monetary policy had been adopted to keep interest rates from rising during the inflationary period that began in 1955-56. The stage would have been set for a Wicksellian cumulative process, while keeping down interest rates by monetary expansion would not, for the reasons already given above, have restrained or lowered velocity enough to prevent a net increase in spending.

Would it then, for the sake of the restraining effect on velocity, have been advisable to keep down the interest rate, if not by monetary expansion, by direct controls instead? In other words, would it have been advisable to make tight money show up entirely in tightened credit rationing rather than in higher interest rates? There are two or three objections to this solution. First, keeping down interest rates would not have correspondingly kept down all the opportunity costs of holding cash balances. True, it would have kept down the attractiveness of *lending* as an alternative to holding cash, but not the attractiveness of spending. Yet an increase in the attractiveness of spending (perhaps because of improved investment prospects or an increased drive among consumers to "keep up with the Joneses" or because of increased labor costs of conducting a given physical volume of business operations)—and some such increase is presumably the initiator of the expansionary process under discussion—this increase in the attractiveness of spending would in itself have constituted an increase in the opportunity cost of holding cash. Second is the question of just *how* interest rates might be kept down and credit rationing tightened instead. Failure to let interest rates play their usual role as a partner of credit rationing by private lenders in the allocation of credit might introduce unnecessary haphazardness into credit allocation. In any case, official manipulation of the tightness of credit rationing seems likely to be a much clumsier, less flexible, and less impersonal control over the total flow of spending than the traditional policy of official manipulation of the money supply. If necessary, monetary policy can always aim at offsetting undesirable fluctuating in velocity by compensating adjustments in the money supply.<sup>25</sup>

#### V. CONCLUSION

This paper has tried to show how illegitimate it is to talk about the effect of a change in interest rates as such. Adjustment of interest rates to the level that equilibrates supply and demand in the loan market, whether the adjustment is upward or downward, always tends to promote the total flow of

<sup>25</sup> It is unfortunate that the monetary authorities, lacking a definite rule of monetary management and the stabilizing expectations on the part of the public that such a rule would enlist, are forced to try to keep predicting business conditions and to keep making policy on an *ad hoc* basis.

spending in comparison to a situation in which interest rates are somehow kept at a disequilibrium level despite changed conditions. What must always be specified and emphasized is the change in underlying data—such as an increase in the money supply, a change in investors' or consumers' propensities to spend, or a shift in liquidity preferences—that leads to or is accompanied by the interest-rate change under discussion.

## MARKET STRUCTURE, UNION POWER AND INFLATION

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### I

In recent years, several economists have demurred at the proposition that the existence of labor unions and of collective bargaining has significantly altered economic conditions. To achieve these results, collective bargaining would have to influence either (a) the general wage level, (b) the wage structure, or (c) profit margins and employment. As we shall see, the crux of the issue is: whether or not certain strategically situated and important unions are in a position to extract wage and allied concessions more rapidly than overall productivity advances. If this be true, then through the operation of the price system, wage pressure will lead to cost inflation, wage distortion or unemployment, or possibly to a blend of these conditions.

For purposes of analysis, two schools of thought on this issue may be sharply distinguished. One, which we may (without prejudice) call the straightforward school, emphasizes that unions have been designed as power institutions to influence wages and working conditions, and that it would be surprising under these circumstances if they lacked power or failed to use this power aggressively.

It would be strange if the bargaining ability of the unions was so specialized that unions were able to force employers to accept the deeply abominated union or closed shop and yet not force them to pay somewhat higher money wages than they would otherwise pay.<sup>1</sup>

The other position—emanating to so great an extent from Chicago that we may, for convenience, refer to it as the "Chicago view"<sup>2</sup>—plays down the

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<sup>1</sup>S. H. Slichter, *Monthly Labor Review*, February 1954, p. 150. Slichter's attitude is shared by Martin Bronfenbrenner, J. M. Clark, E. H. Chamberlin, and Gottfried Haberler among others. In addition, two other labor specialists, John Dunlop ("Wage-Price Relations at High Level Employment," *American Economic Review*, May 1947, XXXVII) and Clark Kerr ("Labor Markets: Their Character and Consequences," *American Economic Review*, May 1950, XL) seem to give qualified acceptance to this view although minimizing its empirical consequences for the present.

<sup>2</sup>The most forthright espousal of this position is by Frank Knight (in D. McC. Wright, *The Impact of the Union*, Harcourt Brace, 1951, pp. 63-67) but he has never formulated his position thoroughly; also Milton Friedman, "Some Comments on the Significance of Labor Unions for Economic Policy," Wright, *op. cit.*, pp. 204-234; Albert Rees, "Postwar Wage Determination in the Basic Steel Industry," *American Economic Review*, June 1951, XLI, and "Wage Levels Under Conditions of Long Run Full Employment," *American Economic Review*, May 1953, XLIII. Walter Morton ("Trade Unionism, Full Employment and Inflation," *American Economic Review*, March 1950, XL, and "Keynesianism and Inflation," *Journal of Political Economy*, June 1951, LIX), and Clark Warburton ("Is a Rising Price Level Inevitable or Desirable?," *Michigan Business Review*, March 1953, V) may be mentioned as sharing the general viewpoint, but emphasizing monetary conditions.

influence of unions on wage rates. Since the demand for a factor of production is a derived demand, the contention is that in most industries demand is far too elastic to allow "significant" wage advances to occur save under conditions of excessive demand. An appended corollary suggests that if monetary controls prevent excessive demand, the phenomenon of rising labor costs will fail to materialize. Evidence to support this view is drawn largely from postwar experience,<sup>3</sup> when, it is alleged, the existence of collective bargaining served to slow down the advance in wage rates.

Among the writers defending this position, Milton Friedman has formulated the case against union power most explicitly and for this reason we will concentrate on his views. Friedman contends that "laymen and economists alike tend . . . to exaggerate greatly the extent to which labor unions affect the structure and the level of wage rates."<sup>4</sup> The straightforward school would doubtless agree that unions do receive credit for advances in real and money wages which changing demand conditions would inevitably have brought about in their absence. But Friedman's statement implies something more: it is his contention that, at present, the long-run demand for labor is sufficiently elastic so that industrial unions (in contradistinction to the craft unions) are unable to raise wages significantly. Unions such as those of the mine workers, steel workers, and auto workers are not very potent; they show "real strength less in wage rises . . . attained than . . . in prevention of a subsequent readjustment."<sup>5</sup> If wages are maintained at too high a level, there exists a tendency (as in the case of the UMW during the twenties) for the union to go to pieces and for the unionized sector to contract.

Lloyd Ulman has argued,<sup>6</sup> convincingly I feel, that Friedman's interpretation of the Marshallian joint demand analysis has been less rigorous than Marshall's original formulation.<sup>7</sup> In his analysis Marshall assumed "that there is no change in the general conditions of supply of the other factors," i.e., "the supply prices for the other factors of production will not be greater than before."<sup>8</sup> These statements reinforce Ulman's contention that the "complementarity effect" of unionism (relations between unions in say the building trade industry) weakens Friedman's labor-cost-ratio argument with respect to craft unions, and if the latter have significant power as Friedman feels, the case against the industrial unions is undermined. But Ulman criticizes Friedman's conception of the supply side, as well as the demand side, and it is this aspect of the argument which is of particular interest to us.

Friedman believes that only through restrictive devices that limit the intrusion of newcomers can the effect of an elastic supply of labor in undercutting

<sup>3</sup> The Chicago view has gained widespread acceptance—in part because of what I would consider to be the illusory stability of the price level since 1951.

<sup>4</sup> Friedman, *loc. cit.*, p. 204.

<sup>5</sup> *Ibid.*, p. 210.

<sup>6</sup> Lloyd Ulman, "Marshall and Friedman on Union Strength," *Review of Economics and Statistics*, November 1955, XXXVII, pp. 384-401. See also Friedman's "Comment," pp. 401-406.

<sup>7</sup> Cf. *Principles*, Eighth Edition, pp. 316-318.

<sup>8</sup> *Ibid.*, p. 317.

an excessive union rate be prevented. Since such restriction depends on political assistance in the form of regulative laws or licensing which only craft unions are adept at obtaining, industrial unions are left face to face with an elastic labor supply and their potential power is sapped. If, however, the elasticity of the labor supply is to prevent higher wage rates, it must operate either (a) through existing firms or (b) through the entry into the industry of new (non-union) firms. Manifestly an existing firm must deal with its own labor force and finds it nearly impossible to contract with cheaper labor save at the cost of industrial conflict. The cost of a strike, the greater cost of operating a strike-bound plant, and the difficulty of finding efficient replacements for the strikers (were it permitted by law) means that to avoid a strike, an existing concern will be willing to settle for a somewhat higher rate, *when the product market permits*. Still there remains the question why the emergence of non-union firms does not undercut the union's position. In certain industries—textiles, clothing, coal to a lesser extent—no doubt such entry may occur, and this does weaken the power of the union. But wherever entry is limited by short-run barriers—capital limitation (steel), technological know-how (flat glass), marketing advantages (automobiles and cigarettes)—wherever patent control is operative, the influx of nonunion firms cannot be a channel for the transmission of the pressures of an elastic labor supply. In markets in which such conditions are present—generally denoted as oligopolistic—analytical considerations would point to a conclusion opposite to that of Friedman—i.e., the labor supply may be impeded in the absence of political assistance.

The validity of Friedman's conclusion with respect to union weakness would seem to depend upon his usual assumption of competition in the product market. He feels that the case for union power rests upon "... a fundamental presumption... [which]... I don't believe to be valid—that a very significant fraction of wage rates in the economy today are fixed by organized groups bargaining one with another on an oligopolistic level rather than by the forces of competition."<sup>9</sup> In no small degree, however, the power of industrial unions does rest upon the conditions existing in the product market.<sup>10</sup> In his commentary on Ulman's article, Friedman has readily agreed "that the existence of product monopoly may on occasion enable unions to get and keep wage increases they otherwise could not get."<sup>11</sup> In this respect at least, Friedman's remark brings the analyses of the Chicago and straightforward schools somewhat closer together. The realities may only be determined by the "appeal to the evidence"<sup>12</sup> for which Friedman has called. The subsequent sections of the paper will attempt an evaluation of the relationship between industrial concentration and the influence of unions upon the wage structure and wage level.

<sup>9</sup> Friedman, "Comments," Wright, *op. cit.*, p. 66.

<sup>10</sup> Cf. John Dunlop, *Wage Determination Under Trade Unions*, chs. 5 & 6. Dunlop emphasizes the conditions in the product market as well as in the factor market as the source of bargaining power. "Union wage policy is designed in the light of the specific character of the product market" (p. 110).

<sup>11</sup> Friedman, "Comment," *loc. cit.*, p. 403.

<sup>12</sup> *Ibid.*, p. 405.

It should be emphasized that such considerations do not refute the major contention of the Chicago school. In periods of excessive demand (or labor shortage), the existence of unions may slow somewhat the rate of advance of wages and prices. Save perhaps for Knight, upholders of the Chicago view do not altogether deny the theoretical possibility of union wage pressure bringing about distortion of the wage structure or cost inflation. It is implied, however, that during non-inflationary periods the union problem will not be pressing, for a moderate amount of unemployment will check the upward pressure on labor costs.<sup>13</sup> The straightforward view, on the other hand, tends to emphasize the traditional attitude that it would be highly ironical if unions—designed, supported, and feared as power institutions—should be discovered to be utterly powerless. The straightforward school views with dismay the inefficiencies and inequities consequent upon the distortion of the wage structure which are familiar to anyone with a rudimentary knowledge of marginal productivity analysis. It views with trepidation the potentially deleterious effects—upon investment and upon *the maintenance of economic stability through private spending*—that are engendered by the lopsided growth of union power in the capital goods, durable goods, and construction industries. But above all, it views with alarm the possibility of a semi-permanent condition of secular inflation arising from wage pressures which would eventually destroy that invaluable bit of social capital—faith in the currency. But, it must be remembered that the upholders of the straightforward view range all the way from John Dunlop, who recognizes the potential dangers of union power but advocates a wait-and-see attitude<sup>14</sup> until experience has indicated the dimensions of the problem, to Henry Simons or Charles Lindblom who stress the incompatibility between unions and free enterprise and whose attitudes vary only between despair and desperation. No doubt, as Bronfenbrenner has observed<sup>15</sup> the more extreme statements have been based in large measure upon generalizing from the atypical experiences of the late thirties, but even the more moderate formulations of the straightforward view leave little room for complacency.

## II

a. *The Role of the Economic Environment*

Prior to any evaluation of union power, consideration must be given to the "normal" or underlying forces determining wages. Traditionally competitive

<sup>13</sup> Rees' views at this point may be distinguished from other members of the school. In non-inflationary conditions, unions may be potent. He states "...considering the extent of unemployment in the late thirties, it is hard to defend Milton Friedman's opinion... that unions in the automobile and steel industries had little effect prior to 1945." ("Discussion," *American Economic Review*, May 1954, XLIV, p. 363). With respect to the package obtained by the Steelworkers in 1949, he feels "...there is little doubt that workers would have received no increases in wages or other benefits at that time in the absence of collective bargaining." ("Postwar Wage Determination...", *loc. cit.*, p. 401).

<sup>14</sup> John Dunlop, "Wage-Price Relations...", *loc. cit.*, pp. 252-253.

<sup>15</sup> Martin Bronfenbrenner, "The Incidence of Collective Bargaining," *American Economic Review*, May 1954, XLIV, p. 307.

wage differentials have been explained by reference to labor supply conditions (including occupational attractiveness) and to differences in skill. The contemporary impact of these influences upon the wage structure is, however, difficult to determine. With respect to compensation for skills, it is pointed out, on the one hand, that on an intraindustry basis this differential has narrowed. Widespread educational opportunities have raised the general level of skill of the working force. The several weeks training required for employment in modern factories stands in sharp contrast to the traditional seven years apprenticeship. Mechanization diminishes the need for craftsmanship, and by reducing the role of the artisan, it might be thought, the need for differentials would shrink. But, on the other hand, heavy capitalization is distributed unequally among the diverse industries. Since it is a weighty responsibility to handle valuable equipment, a greater reward for responsibility may be considered necessary, even though the labor involved may be easily replaceable. Such action would offset the trend toward the narrowing of skill differentials, making it difficult to assess the overall tendency.

The traditional view has furthermore held that in industries in which conditions of employment are unattractive, premium rates must be paid in order to attract an adequate labor supply. In view of the tendency of the labor force to break down into non-competing groups, the applicability of this notion is open to question. No doubt, under competition, labor supply conditions are of fundamental importance, but effective market control when combined with alert unionism may serve to limit the influence of supply upon wage rates. It has been observed that the initial impetus toward organization is provided by the desire to limit the influence of the local labor supply upon working conditions. Such goals have been most closely approximated when the market structure of the industry has been oligopolistic, so that there is little opportunity for new firms to enter and to take advantage of the elastic labor supply.

Contemporary writers pay more attention to the dynamics of demand, and less to supply considerations, than was fashionable in the older competitive and static view. But the change of emphasis from the long-run view, in which changes of demand could be ignored, is enormously significant, for there exists a whole range of possible responses to a shift in demand. Increased demand for labor—arising from an increased demand for the product or a rise in productivity—may result in a proportionate expansion of output and employment or may be run off into higher incomes for the producers already on the scene. An alert group of producers—if they have means to deflect the inflow of newcomers—may succeed in boosting their own incomes without any ill consequences to themselves in the form of reduced employment, but at the cost of a diminished rate of expansion of output and employment in the industry concerned and with prices higher than they otherwise need be. In short, *the greater the success in impeding the supply of labor and inhibiting the expansion of industry, the more exact would be the correlation between (upward) shifts of demand and increased wage rates.* Thus, when the demand side is emphasized and the supply side neglected, successful raiding operations by private groups which change the wage structure may be “explained” or even “justified” by reference to shifts in demand.

The most powerful element affecting demand is the "progressiveness" of an industry. Under this heading are included increases in product demand and rising physical productivity both of which will tend to increase revenue productivity. In his careful study<sup>16</sup> of the influence of productivity upon the wage structure, John Dunlop has demonstrated that a significant degree of rank correlation exists between changes in output per man-hour and changes in average hourly earnings. In Dunlop's view the life-cycle of an industry tends to follow a logistic curve, and by its nature brings about a close association between increases in productivity and the expansion of output and employment<sup>17</sup> during the period of most rapid growth. In the typical progressive industry, the rapid growth in product demand, by shifting the demand curve for labor to the right, reinforces the quest for higher wages, and has helped to bring about the historical correlation between increased physical productivity and higher wage rates. Changes in the wage structure are, therefore, shaped by the degrees of progressiveness in the several industries.

A factor on the demand side of even greater long-run importance is the character of the product market. Though shifts in demand may be summarized under the heading "progressiveness," the degree to which the benefits arising from such shifts may be *retained* by the producers in the industry are largely determined by the structure of the product market. Since the demand for labor is derived, if an industry's market structure is such as to encourage "stable" prices, the employees will benefit from such protection. In particular, the more inelastic the demand for the product and the stronger the influence of what is called "oligopolistic rationality" in an industry, the higher will the wage rate tend to be. As has been indicated above, the existence of an oligopolistic market structure may give a union the *leverage with which to raise wages*,<sup>18</sup> through the exclusion of new non-union firms which might avail themselves of the existing labor supply.

#### b. *The Influence of Unionism*

Taken in conjunction with that intangible, "the traditions of an industry," the factors enumerated above create the economic environment in labor submarkets in which wage differentials and changes are determined. The addition of unionism may change the economic pattern which would have existed in its absence, but it should always be remembered that unions must operate within a

<sup>16</sup> J. T. Dunlop, "Productivity and the Wage Structure," in *Income, Employment, and Public Policy* (Essays in honor of Alvin H. Hansen), 1948, pp. 341-362.

<sup>17</sup> "Wage rates show some tendency to increase most in that group of industries in which output, employment, and productivity increase most." (*Ibid.*, p. 361.)

<sup>18</sup> In respectable thought this idea can be traced back at least to the nineties, when the Webbs developed it in their monumental *Industrial Democracy*: In their view, all producers were subject to a "sea of competitive pressure" emanating from the consumer. Under this pressure earnings and conditions of employment would be eroded unless an industrial "dyke" (a trademark or some similar device) was erected, which would serve to shelter the employees of a concern or an industry from "the higgling of the market." They quote with approval Stirling's dictum that "the strength of the capitalist is the shield of the laborer." (Cf. pp. 689-691.)

specific economic context. In a market economy, unions can only accomplish their aims by influencing supply and demand; but in so acting unions may so alter the forces determining the wage structure that unionism must, in itself, be considered as a separate influence on wages. Unions must attempt to diminish or augment certain other "economic" forces impinging on the wage structure. The skill composition of the working force may be altered through union training, standards or restrictions. Unions do seek to limit the influence of the labor supply—particularly the local labor supply.

On the demand side, unions desire to augment the advantage to themselves of industrial "progressiveness" and attempt to capture technological gains before they can be passed on to the consumer. The more competitive the labor market, the less likely is it that increases in productivity will be reflected in exceptional wage advances, or as Dunlop has put it, "differences in bargaining power of labor organizations will influence the extent to which gains in productivity will be correlated with wage rate changes."<sup>19</sup> Trade unions have, moreover, exhibited a deep and abiding interest in conditions in the product market, and have traditionally exerted themselves to alter the terms of trade in favor of their particular industry or segment of an industry. In general, the less competitive the market structure the more gratifying it is to the union. Dunlop has certainly not overstated the case, when he suggests:

A highly competitive product market may immediately transmit any gains in productivity in the form of price adjustments rather than permit the employer to retain higher margins later to be shared with the wage earners in the form of higher wage rates. Partly for this reason, labor organizations may prefer to deal with 'monopolists' rather than with a 'competitive industry.'<sup>20</sup>

Since unions must operate within a specific economic context in order to attain their goals, it is misleading to speak of the power of unionism-in-general. There are unions and unions. A union, situated in a surplus labor market, which must deal with a fiercely competitive industry in which demand has become stabilized and productivity does not increase, may be able to obtain psychological and social benefits, but its economic returns to its members are likely to be small. On the other hand—particular, strong, strategically-situated unions may be in a position to take advantage of the market structure or the rate of expansion and of technological progress in an industry, and thereby to impose upon that industry a level of costs and prices that would not have existed in its absence. In short such unions may be able to distort the wage and price structure.

The tendency for what may be termed "effective unionism," to be associated only with certain pre-existent market conditions implies that simple comparisons of union and non-union wage rates over a period of time may not fully indicate unionism's power under favorable circumstances. Statistical studies such as those of Ross<sup>21</sup> or Levinson,<sup>22</sup> which follow in the pioneering footsteps

<sup>19</sup> Dunlop, "Productivity . . .," *loc. cit.*, p. 351.

<sup>20</sup> *Ibid.*, p. 351.

<sup>21</sup> Arthur M. Ross, *Trade Union Wage Policy*, 1948, Ch. 6. See also Ross and Goldner, "Forces Affecting the Inter-Industry Wage Structure," *Quarterly Journal of Economics*, May 1950, LXIV, pp. 254-281.

of Paul Douglas,<sup>23</sup> fail, in my opinion, successfully to portray this *qualitative feature of union power*, since they can evaluate only unionism-in-general. Unionism, *per se*, need not affect the wage structure significantly, and the strategic power of effective, well-placed unions may not be discerned when the composite picture is watered down by the existence of weak unions in competitive, non-progressive industries.

Dunlop's work, and a kindred study by Joseph Garbarino,<sup>24</sup> by taking into consideration the influence of market structure and productivity come much closer to disclosing the qualitative feature in unionism. But in Dunlop's case, the emphasis on the economic context within which the union must operate comes close to eliminating unionism as a distinct factor, for Dunlop observes that his "theoretical framework for inter-industry wage movements appears to give no distinctive place to the role of labor organizations."<sup>25</sup> He feels that the "important realities" (skills, productivity, the structure of the product market, etc.) "tend to set practicable limits to bargains,"<sup>26</sup> and suggests that wage settlements in the long run will not diverge markedly from the limits set by his theoretical framework. Apparently unionism's influence is confined to influencing where, within these limits, the settlement does actually fall, but if the limits are broad, the role of unionism may be very powerful in some cases.

Garbarino follows Dunlop in emphasizing the importance of the degree of concentration and changes in productivity in determining relative earnings. But, he also follows Ross in introducing as a variable the degree of organization in the industry. Through the apparatus of multiple correlation, Garbarino reaches the conclusion that the three variables—productivity, concentration and unionization—will (statistically) account for the major portion of differential movements in average hourly earnings. By including the variables of concentration and productivity, Garbarino brings into focus what, to my mind, is the qualitatively significant feature in unionism—i.e., strategic position—and thereby avoids the pitfall of dealing with unionism-in-general.

Acute as it is in emphasizing the economic context within which unions must operate, Dunlop's analysis—by avoiding explicitly to introduce unionism—overlooks the possibility that it is the existence of unionism which determines the degree of "importance" of the "important realities." *A labor union operates within and through these underlying economic realities, which provide the leverage by which it may achieve its goals. A union must have something to bite upon, so to speak, in order to obtain advantages for its members—and this is provided by the product market structure or the progressiveness of the industry.*

<sup>23</sup> Harold Levinson, *Unionism, Wage Trends and Income Distribution, 1914-1947*, Michigan Business Studies, 1951, X.

<sup>24</sup> P. H. Douglas, *Real Wages in the United States, 1890-1926*, Houghton Mifflin, 1930. Douglas' conclusions were that organization initially gains for the membership higher wages, but subsequently the rate of increase slows down to that of non-union industries. (See pp. 139-41, 562-4.)

<sup>25</sup> Joseph Garbarino, "A Theory of Inter-Industry Wage Structure Variation," *Quarterly Journal of Economics*, May 1950, LXIV, pp. 282-305.

<sup>26</sup> Dunlop, "Productivity . . ." *loc. cit.*, p. 360.

<sup>27</sup> *Ibid.*, p. 360.

A labor organization situated in a highly concentrated industry, which need not fear the entry of new firms is in a position to play upon either the inelastic or the expanding demand conditions prevailing in the product market to extract higher wages.

Garbarino has referred to the "pronounced association between unionization and concentration," and has suggested that this may help "to explain the correlation between concentration and earnings."<sup>27</sup> This point needs to be stated more emphatically. One cannot explain the wage structure on the basis of the productivity argument alone. To do so is rather reminiscent of the circular reasoning formerly used in establishing freight rates. It was once argued that freight rates should be based on the difference between the price of a commodity in two regions, but the freight rate also becomes the difference in the price of a commodity between two regions. Similarly, high wages *must* be associated with high productivity, for if by any means a high rate of pay is established for an industry, productivity will rise to meet that rate of pay through the limitation on the expansion of the industry. Marginal productivity, as Robertson has pointed out, does not determine wages, it merely measures them. It should not be surprising therefore that increased wages are associated with increased productivity. The point is that the progressiveness of an industry provides an opportunity for a union to demand and obtain increased wages, while the oligopolistic structure precludes the erosion of these gains through the entry of additional firms. For the most part, *it is unionization that gives to oligopoly its significance for the wage structure, and the converse is also true—that it is oligopoly that gives to unionism its significance for the wage structure.*

Since it is the structure of the product market that in the long run provides the protection for union achievements, we might expect strategic power to be manifested in oligopolistic industries. Since expanding demand and rising productivity provide the wherewithal and the justification for increased wages, such power is most likely to occur in heavily capitalized industries in which technological progress tends to be rapid—and in which (confirming our suspicions) oligopolistic relationships are likely to prevail. Moreover, since oligopoly only creates for the union the possibility of playing upon the demand curve for the industry—the power is likely to be greater in basic industries, in which demand tends to be most inelastic rather than in those that produce for consumer markets.

On the basis of this sort of reasoning, we might expect that a union ideally-situated for the exercise of strategic power would be in the steel industry. For half a century the industry has been the prototype for effective price leadership; it is a model of oligopolistic rationality. Highly capitalized and technologically progressive, the industry is a basic one, while the expanding demand for its

<sup>27</sup> Garbarino, *loc. cit.*, p. 302. This pronounced association between unionization and concentration by the way, also explains why it is difficult to subject these data to variance analysis. One cannot find enough cases of the progressive-oligopolistic market structure industries without unionism to examine along with such cases combined with unionism, to be able to perform a significant test.

product is notoriously inelastic. Moreover, producers in the industry worry less about prices than whether some rival will obtain a cost advantage. The economic context is almost ideal for the exercise of union power. From 1948 to 1955, average hourly earnings in basic steel rose from \$1.58 per hour to \$2.37 per hour, an increase of 50 per cent or better than 7 per cent a year. Over the same period, earnings in all manufacturing rose from \$1.40 to \$1.88, an increase of 34 per cent or a shade less than 5 per cent a year. In terms of fringe benefits—pensions, medical programs, guaranteed annual wage—the accomplishments have been similarly impressive. It should be observed that, save for the Korean war interlude, this period was non-inflationary, a condition, it is generally agreed, that is most favorable for obtaining differentially advantageous benefits for the union membership. In autos, earnings increased from \$1.61 an hour to \$2.29 an hour—a rise of 42 per cent or 6 per cent a year, and the UAW has been a pioneer in developing fringe benefits. In part, the somewhat less satisfactory accomplishments may be attributed to the greater degree of elasticity of the demand for cars as compared to the demand for steel—since new cars compete with old ones and the rate of scrapping depends on the price of new cars; the demand for steel, on the other hand, is a derived one. By way of contrast, earnings in textile mills over this period increased from \$1.16 an hour to \$1.39 an hour—a rise of 20 per cent or less than 3 per cent per year. Much of this may be ascribed to the vigorous competition which characterizes much of the textile industry, with the consequent downward pressure on prices and wages. Within such an economic context, union pressure is fruitless.

### III

#### a. *Some More General Influences on the Wage Structure*

Wage movements are determined not only by the particular conditions prevailing in the labor submarket, but by more pervasive social and economic forces. Among these, it is generally agreed that the level of national income is the most important. During periods of over-full-employment, the wage structure tends to contract or to narrow. This phenomenon has been observed in both World Wars. High demand for labor drives up non-union rates without union pressure; for non-union employers are forced to raise rates or suffer the loss of employees. We have observed that during such periods wages under unionism may be somewhat less sensitive to changes in demand, than would be the case in a free market. Union rates may tend to lag. However whenever modest labor surpluses appear, union power reasserts itself and the wage structure tends to spread.

Levinson, who has studied this problem most carefully, has suggested that two other broad influences are at work.<sup>26</sup> One is government policy which may be actively sympathetic to labor, and is seeking to raise the wages of *all* labor, through minimum wage-laws or by encouraging and protecting the organization of employees. Such activity will tend to prevent a spreading out of the wage structure. The relatively poor showing of the traditionally organized during New

<sup>26</sup> Levinson, *op. cit.*, pp. 46-47, and 66-73 (summary sections).

Deal days may be attributed in part to government policy, but might also be attributed to the enormous gaps opened in the wage structure during the depths of the depression. A final influence is what Levinson calls "sympathetic pressure."<sup>29</sup> This is not an 'autonomous' influence but instead is dependent upon either national income or government policy. Sympathetic pressure eases the transmission of the gains of unionized employees to the unorganized. For example, when the government encourages labor organization, as during the thirties, non-union employees are more likely to get equivalent raises, since the government has put the fear of organization into the employers.

At any particular point in time, the existing differentials will be established through the resolution of these conflicting forces—specific market factors, unionism, and the three more general influences. Probably the most potent influence is the level of national income and employment, for at full employment the wage structure will tend to tighten due to the fear of losing employees. In the postwar period, by and large, conditions have been conducive toward a tight wage structure. Employment has been high. Sympathetic pressure has encouraged the narrowing of differentials. First, because employment was high, but in addition, because the continued protection of the right to organize under the Taft-Hartley Act has meant that non-union employers—with profit margins relatively secure—have used unforced wage increases as a weapon to preclude organization. On the other hand government policy is no longer as potent an influence for the narrowing of the wage structure as was that of the New Deal with its strong sympathy for the underdog. The Truman administration, less idealistic and more astute in terms of traditional politicking, tended to throw its weight behind the powerful national union locked in an emergency strike, and to leave less conspicuous labor groups to fight their own battles. The Eisenhower administration, by adhering to a "neutralist" policy in labor disputes, has failed to use government policy as a device to shore up the lower end of the wage structure.

#### b. *A Prognosis for Wage Developments*

When certain strategically situated unions are able regularly to obtain wage increases which are significantly greater than the rise in overall productivity one of two events must occur: either, (a) less powerful unions will fail to obtain comparable increases and the wage structure will become somewhat distorted with the consequent possibilities of maldistribution of income and malallocation of resources, or (b) other wage earners will obtain comparable increases and labor costs will rise since the rise in money wages exceeds the gain in productivity. In the former case, inflationary pressures will be quite slight, and, therefore—so far as the public is concerned—the maleffects are masked or disguised. In the latter case, the upward pressure of costs will tend to generate price increases since profit margins are narrowed. Wage increases have then passed beyond what Gottfried Haberler has called the "critical limit,"<sup>30</sup> implying that since labor costs are rising, inflation can be prevented only at the price of unem-

<sup>29</sup> *Ibid.*, pp. 71-72.

<sup>30</sup> Gottfried Haberler, "Wage Policy, Employment, and Economic Stability," in Wright, *op. cit.*, p. 39.

ployment. As profit margins are narrowed, if prices are not raised, it is probable that unemployment will increase. But this is unlikely to occur: first, because the government will intervene to maintain high level employment, and secondly, when the economy is sufficiently buoyant to permit of comparable wage increases all along the line, it is buoyant enough to support price advances.

But we now have developed the germ of a theory or an anticipated pattern of movement of the wage-price structure. First we note that in non-inflationary periods, certain unions strategically located in highly-concentrated, progressive industries have "leverage" to obtain wage increases greater than the rise in average productivity. Secondly, we note that during such periods, some dispersion of the wage structure is likely to occur, mitigating the upward pressure of costs on prices, but that during periods of high employment, the wage structure is likely to "tighten" or "contract." During such periods of tightening, it is the wage rates obtained by the strategically situated powerful unions that set the level toward which the other rates climb; *these foci of power become the fulcrum from which leverage is extended to raise rates all along the line.* To change the metaphor, we have what might be called a "whiplash effect," first during non-inflationary periods, the hand and handle of the whip (the strategic wage rates) move, then during a period of high demand, and tightening of the wage structure, the tail of the whip follows, snapping up the wage rates of the non-strategic groups (to prevent loss of labor) and thereby intensifying the inflationary pressure from the cost side. Inflationary pressure from the cost side may be difficult to discern apart from conditions of high demand, but that may be because of its own insidious operation through the changing of the wage structure.

The repercussions may become more complicated, and the inflationary pressures further intensified if the unions which are strategically situated attempt to maintain differentials. Since full employment means a tightening of the wage structure, some fall in the relative wages of the better situated workers will occur—perhaps even some fall in their real wages. If they attempt to maintain their advantages inherent in the historically determined wage structure—with its legacy of industrial differentials arising in periods of less than full employment—it may intensify the upward pressure on prices from the cost side, and at the same time complicate the problem of maintaining high level employment.

#### *e. A Look at the Evidence*

From 1948 until well into 1956, we witnessed a period of relative price stability, save for the interlude of the Korean War. By March 1956, the Consumer Price Index had reached 114.7, just .4 per cent above the level prevailing in August 1952. In the same period, average hourly earnings in manufacturing rose 18 or 5 per cent per annum. In some strategically situated industries, earnings were rising even more rapidly—say 7 per cent per annum, which suggests some spreading of the wage structure. When fringe benefits are included total hourly compensation of employees rose even more rapidly.

In order to estimate the impact on costs, these figures must, of course, be compared with the figures on productivity. A careful investigation by the Bureau of

Labor Statistics<sup>31</sup> has suggested that the annual rate of increase of output per man-hour in manufacturing lay between 3.0 and 3.6 per cent for the period 1947-53, depending upon which of four measures was used. Some incomplete data indicate that in the subsequent two years the rate may have been even higher. For the same period, according to the Commissioner of Labor Statistics,<sup>32</sup> productivity trends for non-production workers have been comparable to those in manufacturing. Nevertheless, it is plain that over the period labor costs have risen since the increase in employee compensation has exceeded the rise in productivity by roughly 2 per cent.

It may be that the upturn in the productivity trend in recent years will prove to be permanent. Certainly we may hope that the good news will continue. On the other hand, it is possible that we have been experiencing a postwar spurt in productivity similar to the one that occurred after the first World War. But even in these years of advance, labor costs have been rising. It would be foolhardy under the circumstances to count upon an annual increase of productivity significantly greater than 3 per cent, but this implies that monetary compensation of employees cannot increase as rapidly as in recent years if we are to maintain price stability.

#### d. *Why Did the Price Level Remain Unaffected?*

Confronted with the above statistics, indicating a rise in labor costs of 1-2 per cent per annum, we might well have expected a rise in the price level of 1-2 per cent per annum providing the monetary wherewithal were forthcoming. Examination of the price indices, however, brings us up against the cold fact, that until the last few months the CPI has shown only the slightest upward drift. Now it is true that consumer prices tend to lag somewhat behind wholesale prices, but the explanation does not lie here. Much of the answer lies in what I have referred to in an early footnote as the "illusory stability" of the index. From 1951 to 1955, the cost to the consumer<sup>33</sup> of purchasing food and apparel declined about 3 per cent, and since these two items bulk so large in consumers' budgets, the declines offset rather sharp increases elsewhere—thus giving relative stability to the index. But overall stability has been based upon the precipitate decline in farm prices, in conjunction with fierce competition in some of our lighter indus-

<sup>31</sup> See Leon Greenberg, "Output per Man-Hour in Manufacturing 1939-47 and 1947-53," *Monthly Labor Review*, January 1956, pp. 3-4. This article was a summary of B.L.S. Report No. 100. See also *Potential Economic Growth of the United States During the Next Decade*, Materials prepared for the Joint Committee on the Economic Report by the Committee Staff, 1954, pp. 7-8. In that document the committee staff assumes a rise in output per man-hour of 2.5 per cent per annum, possibly approaching 3 per cent.

<sup>32</sup> Cf. Ewan Clague, "Trends in Productivity Since the War," before the National Industrial Conference Board, New York City, January 20, 1956, pp. 9-10.

<sup>33</sup>	Average	1951	Food	112.6	Apparel	106.9
	"	1952	"	114.6	"	105.8
	"	1953	"	112.8	"	104.8
	"	1954	"	112.6	"	104.3
	"	1955	"	110.9	"	103.7

Source: *Monthly Labor Review*.

tries. How long can such "fortuitous" compensation continue? The decline in farm prices seems to have been slowed or stopped. There are limits to the "stretchability" of the wage-price structure. Apparently the opportunities for compensation here have just about been used up.

Another offsetting factor has been a decline in business taxes which has permitted certain industries to maintain profits without a parallel rise in prices for each advance in costs. But government expenditures are moving upward once again, and in any case, this particular channel for tax relief does not appear to be very popular politically.

#### e. *Some Straws in the Wind*

Since 1950 much of our wage negotiation has operated in the shadow of the GM-UAW agreement with its "annual improvement factor" of five cents per hour per year. It has been difficult for other "major" industries to offer less than five cents an hour without provoking unrest, and causing trouble for the union leadership. This is probably the origin of the generous steel settlement in 1954, when, with mills operating at 65 per cent of capacity, economic conditions were hardly conducive toward any increase. The original General Motors contract which included this feature caused Arthur Ross to observe, that the settlement "calls for sympathetic consideration . . . (as an approach to) . . . a rational and objective basis of wage determination."<sup>34</sup> No doubt, the greater length of these contracts has created an environment in which this concern and others like it can get on with the job of production without fears of intervening work stoppages. Wide application of similar contracts may lead to an atmosphere of greater harmony in the sphere of industrial relations. But from the wage-price standpoint, the contract is not flawless. Originally the modest improvement factor was within the limits of the expected general rise in productivity. In subsequent contracts it has been increased sharply, and it may be that the union views the feature as an entering wedge, and hopes to raise it in future contracts—above the annual increase in average productivity. What is perhaps even more likely—and appears to be occurring at the present time—is that the annual improvement factor may be used to exhaust all the slack on this side of the critical level, so that any supplementary benefits won at the bargaining table would exceed the average rise in productivity and therefore constitute either distortionary or inflationary pressure. In light of the unremitting upward pressure on costs, we should not allow the earlier period of overall price stability to obscure the fact that in the last year, consumer prices have risen some 2.3 per cent.

#### IV

#### *Conclusion*

We have thus come to a position which supports, at least, some of the fears of the straightforward school. Large wage increases won by strategically placed unions may lead to either (a) distortion of the wage structure if other wages

<sup>34</sup> A. M. Ross, "The 1948 General Motors Agreement," *Review of Economics and Statistics*, February 1949, XXXI, p. 6.

lag, or (b) rising costs and upward pressure on prices if other wages rise equivalently. These two results may be combined in different proportions under different circumstances, but, under the conditions envisaged, there is no possibility of escaping from both. The economy will move between episodes of price plateaus (accompanied by a stretching of the wage structure) succeeded by periods of rising prices. The precise proportion between wage-distorting and cost-inflating forces depends upon the economic climate—in particular upon the level of national income. When employment is high enough, we may find the whiplash effect, wherein demand conditions cause a narrowing of the wage structure, thus generating more upward pressure on wages and prices. In light of the employment obligations of the government, the long-run outlook for the dollar is probably not too bright.

According to this analysis, the power of strategically-based unions rests upon the technological or market structure characteristics of their particular industries. Most important is oligopoly, for it is the preclusion of entry that gives a union power in the long run to play upon the demand curve of the industry. This would mean that an individual union by itself may establish a monopolistic tollgate and gradually drive up relative wages and prices in that industry. The limits to the immediate exercise of power are those delicate diplomatic ones characteristic of situations of oligopoly or bilateral monopoly:<sup>35</sup> the fear of faring too well and attracting public disapproval, the fear of encouraging government intervention, and the fear of precipitating powerful and resourceful antagonists into a situation of conflict. But gradually, bit-by-bit a union so situated may peacefully accomplish its purposes.

A monopolistic tollgate may be erected by either party—the companies or the union—or by both jointly. The effects are the same: higher prices for this particular industry—an improvement in the terms of trade to the disadvantage of other groups in the society. Now if the industry itself has established this monopolistic tollgate, it would appear quixotic for the union to forego an opportunity to share in the booty. As long as monopolistic gains are obtained, they might as well be distributed broadly as narrowly. What occurs then is joint extraction of mutual exploitation of the economy by the groups in the individual industry. Union and industry exist in a symbiotic relationship based upon the oligopolistic structure of the industry.

As we look at price behavior in recent years, we can discern some confirmation of this pattern. In the five years starting with the outbreak of the Korean war,<sup>36</sup> for example, we discover that wholesale prices rose some 10 per cent,

<sup>35</sup> Cf. William Fellner, *Competition Among the Few*, 1949, pp. 27-33, see also pp. 252-262.

<sup>36</sup> Category

Category	Wholesale Prices	
	June 1950	March 1955
All	100.2	110.0
Farm	94.5	92.1
Textile Products & Apparel	93.3	95.3
Metals & Metal Products	108.3	131.9
M'ch'y & Motive Products	106.3	126.2

Source: *Monthly Labor Review*.

while prices of metal products and machinery increased by 20 per cent. It is somewhat anomalous that such price trends should be manifested in these industries of high and advancing productivity, in which we might normally anticipate a fall in relative prices. To take a specific case since 1946, the price of steel has risen some 120 per cent, while the consumers price index rose some 40 per cent.

Now all this may suggest a somewhat jaundiced view of unions, but nothing is further from my mind. In the first place, prior to the widespread use of collective bargaining, the labor market did not approach in operation the trim elegance of theoretical competition. In fact the market was highly disorganized, and it is not improbable that the resulting haphazard distortions were considerably greater than are to be found in an institutionalized labor market, operating under collective bargaining. Secondly, the contemporary wage price pattern is not without its distinct advantages. The erratic price movements characteristic of the older pattern have been curbed. Consequently, expectations of price and wage declines no longer create the speculative forces which amplify deflationary forces. An element of stability is created since the likelihood of precipitous declines in output and employment is reduced. Thirdly, although relationships between industry and union may be symbiotic, the price level *need not be a direct reflection of union wage pressure*. For example in the steel industry, price movements to a considerable extent seem to be based upon a decision to expand steel capacity, and the conviction of the steel industry that capital should be supplied by the consumer in the form of higher prices.<sup>37</sup> Surely the union is not responsible for this. Finally, it seems to me that the issue whether or not we ought to encourage collective bargaining has been settled for a decade or more, the problem for us is to make the tool a more effective one.

What this seems to imply is the need for continual public scrutiny of all conglomerations of industrial power, and frank recognition of the fact that a monopolistic tollgate may be erected by a union, and although based upon imperfections in the product market, such accomplishments may only be discerned on the labor market side. Workable competition would require us to examine business performance as reflected in wages as well as prices and profits.

With respect to the repercussions for the price level and the integrity of the dollar, experience abroad has been far from reassuring. In a recent paper,<sup>38</sup> J. R. Hicks, has examined some of the consequences of what he calls the replacement of the Gold Standard by the Labor Standard, and in particular whether the Labor Standard suffers from an inflationary bias. He adduces three reasons for fearing that it may be, but ends up on a British note of guarded optimism, and suggests that in the post war years its inflationary bias has been the consequence of the "phony" price relationships and disorganized wage structure

<sup>37</sup> Of all the complaints by organized labor concerning distributive justice since the end of the war, to my mind, this has been the most valid. Why should the price level be determined by the need for capital, and all the savings supplied ultimately by consumers redound to the credit of the stockholders?

<sup>38</sup> J. R. Hicks, "Economic Foundations of Wage Policy," *Economic Journal*, September 1955, LXV, pp. 389-401.

which emerged from the war.<sup>39</sup> Nevertheless, in the past year, Britain has suffered from a new burst of inflationary forces; and, despite its stringency, monetary policy seems to have failed to cope with the problem.

*Postscript*—Since the completion of the original version of this paper more than a year ago, there has been a distinct change in the economic climate—and this change, in the opinion of the writer, has tended to confirm the analytical implications of the article. Recent statistical data seem to justify last year's gloomy forebodings. The evidence suggests that, temporarily at least, the increase in productivity has slowed down to a rate not much above 1 per cent a year. The Consumer Price Index has climbed steadily upward, rising an additional 2.6 per cent or a total of 4.9 per cent since March 1956, without a noticeable excess of demand.<sup>40</sup> Wages and prices, moreover, have continued their upward relative climb in the strategic industries—notably in steel despite less-than-capacity operations. No attempt has been made to revise the statistics included in the paper, since that would involve a change in structure and emphasis. It will be seen that the main point in any such revision would be a discussion of the gradual rise in prices that has succeeded the "illusory price stability" of the post-Korean period.

<sup>39</sup> *Ibid.*, pp. 401-02. This approach is similar to the tolerant one of Harry Johnson ("The Revival of Monetary Policy in Britain," *The Three Banks Review*, June 1956, No. 30, pp. 3-20), who feels that "the solution to the overload on the economy seems to be to stagger along under it as we have been doing, meeting crises by a succession of temporary and regrettable expedients" (p. 20).

<sup>40</sup> That the rise in wages has been outstripping the gains in productivity seems to be corroborated by the Department of Labor's recent release, *Productivity, Earnings, Costs, and Prices in the Private Nonagricultural Sectors of the Economy, 1947-56*.

## THE BANK HOLDING COMPANY ACT OF 1956

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### I

With the signing of Public Law 511 on May 9, 1956 by President Eisenhower the freedom of action of bank holding companies was significantly curtailed. They must register with the Board of Governors and are now subject to examination by the Board. Subject to certain exceptions, bank holding companies require the prior approval of the Board before they acquire voting shares of any bank, and must divest themselves of their voting shares in nonbanking organizations.

Bipartisan support of the measure and an overwhelming House vote in 1955<sup>1</sup> were not intended as a condemnation of these companies for having seriously abused their freedom in the past. Rather, the wish to prevent any harm from arising in the future was a major consideration, at least among certain proponents of restrictive legislation who, like President Roosevelt (1938) and the present Board of Governors (1955) conceded that so far "no great evil" had resulted from these companies.<sup>2</sup> Basically the Bank Holding Company Act of 1956 is a precautionary measure, certain features of which, as will be described below, were perhaps too drastic.

Soon after this form of organization first became prominent, Congress dealt with bank holding companies in Section 19 of the Banking Act of 1933 (amended slightly in the 1935 Act). A holding company affiliate, defined as a corporation controlling a majority of the stock of a member bank, which wishes to vote its stock, requires a voting permit from the Board of Governors. The "holding company affiliate" has to accumulate over a period of years a reserve of readily marketable assets equal to a stated per cent of the aggregate par value of bank stock owned, to submit to examinations by the Board, and to separate itself from any securities companies it might own. However, these regulations could be avoided by controlling without voting the stock. Thus in 1954 only eighteen corporations were subject to Regulation P of the Board of Governors of the Federal Reserve System covering "holding company affiliates." The 1956 law does not replace Regulation P; rather, a new Board of Governors regulation, Y, was added, effective September 1, 1956.

Recommendations to stop the further expansion of bank holding companies and to order their gradual liquidation were included in President Roosevelt's 1938 program to strengthen and enforce the antitrust laws. As late as 1945 the Federal Deposit Insurance Corporation advocated these proposals because of the monopolistic tendencies of bank holding companies and the difficulty of super-

<sup>1</sup> The vote was 371 to 24. (*Congressional Record*, CI [1955], 6977).

<sup>2</sup> 75th Congress, 3rd sess., Senate Document 173 (Message of April 29, 1938), p. 8; Governor Robertson, 84th Cong. 1st sess., House Banking and Currency Committee Hearings . . . on H.R. 2674 p. 94. Statement of Rep. Rains of Alabama, *Congressional Record*, CI (1955), 6825.

vising them. To the Senate Banking and Currency Committee the need for legislation appeared to be "both pressing and clear" in 1947. Numerous bills and committee hearings whose record spreads across hundreds of printed pages attest to the attention Congress gave to the subject during the next decade.<sup>3</sup>

Spearheading the campaign for a strong law were notably the members of the highly vocal Independent Bankers Association of America and the allied I.B.A. of the Twelfth Federal Reserve District, who view the bank holding company as a veritable "instrument of the devil."<sup>4</sup> To them any form of multiple office banking (except perhaps home town branches) is "monopoly banking." Holding companies have served as Trojan horses to break down previous state laws against branch banking.<sup>5</sup> Florida, Minnesota and Wisconsin forbid banks' having any branches; New York confines branches to a single banking district. Yet, the independents argue, in each of these states holding companies serve as instruments of evasion of various banking regulations.<sup>6</sup>

Threading one's way through the maze of debate and discussion to discover their factual basis is not facilitated by the circumstance that much of the argument against bank holding companies consists of passionately held opinions, "a parade of imaginary horrors, potential and speculative abuses," in the words of the president of the most important one, Frank Belgrano, Jr. of Transamerica.<sup>7</sup>

<sup>3</sup> Roosevelt, *loc. cit.*; Federal Deposit Insurance Corporation, *Annual Report for . . . 1944* (Washington, 1945), p. 11; 80th Congress, 1st sess. Senate report 300, p. 1. A summary of bills to regulate bank holding companies submitted 1941-1952 is found in *Bank Mergers and Concentration of Banking Facilities*. A Staff Report to Subcommittee No. 5 of the Committee on the Judiciary, House of Representatives (Washington, 1952), pp. 67-71. For a brief history of bills since 1938 see U.S. Senate, 84th Congress, 1st sess., Report 1095, *Control of Bank Holding Companies*, pp. 3-4 (hereafter cited as 1955 Sen. Rpt.).

Hearings on the subject include (I) 84th Congress, 1st sess., *Control and Regulation of Bank Holding Companies*. Hearings before the Committee on Banking and Currency House of Representatives . . . on H.R. 2674 . . . (Washington, 1955); (II) *ibid.*, *Control of Bank Holding Companies*. Hearings before a subcommittee of the Committee on Banking and Currency United States Senate . . . on S. 880, S. 2350, and H.R. 6227 . . . (Washington, 1955); (III) 84th Congress, 2nd sess., *Control of Bank Holding Companies* Hearings before the Committee on Banking and Currency . . . on amendments to S. 2577 . . . (Washington, 1956); (IV) 83rd Congress, 1st sess., *Bank Holding Legislation*. Hearings before the Committee on Banking and Currency United States Senate . . . on S. 76 and S. 1118 . . . Parts 1, 2 and 3 (Washington, 1953-54); (V) 82nd Congress, 2nd sess., *Control and Regulation of Bank Holding Companies*. Hearing before the Committee on Banking and Currency House of Representatives . . . on H.R. 6504 . . . (Washington, 1952); (VI) 81st Congress, 2nd sess., *Bank Holding Bill*. Hearings before a Subcommittee of the Committee on Banking and Currency United States Senate . . . on S. 2318 . . . (Washington 1950); (VII) 80th Congress, 1st sess. *Providing for Control and Regulation of Bank Holding Companies*. Hearings before the Committee on Banking and Currency United States Senate . . . on S. 829 . . . (Washington, 1947). Hereafter these hearings will be referred to by Roman numeral and page.

<sup>4</sup> V, 73; Cf. the reference to "a diabolical instrument" in I, 202.

<sup>5</sup> III, 77; V, 60. See the editorial in the *American Banker* of December 17, 1949 (reprinted in V, 98) and its front page editorial of May 14, 1956.

<sup>6</sup> I, 159-60; II, 107; IV, 41; 80th Congress, 1st sess., Senate Report 300, p. 1; 84th Congress, 1st sess. House of Representatives, Report 609, *Bank Holding Company Act of 1955*, pp. 3-4 (hereafter cited as 1955 H.Rpt.).

<sup>7</sup> I, 272, and IIb, 59-60. Cf. the study of Prof. D. Knight and R. H. Smith of the Stanford

Outstanding, perhaps, in this regard was the suggestion that legislation was needed on the grounds of national security, to prevent subversives from gaining control of our banks.<sup>8</sup> Holding companies have likewise resorted to sophistry.

The pros and cons of group banking (as the ownership of banks by a holding company is sometimes called) are too well known to require extended discussion.<sup>9</sup> The parent can provide its banking subsidiaries with such management skills as the handling of the investment portfolio, purchasing of supplies, advertising, auditing, as well as advice concerning day-to-day operations. Loans in excess of what an individual bank can make, may readily be apportioned among the holding company's subsidiaries.<sup>10</sup> What complaints are heard seem to originate from rival banking institutions rather than the customers of the holding companies.<sup>11</sup> Prompted by such factors as improved service, increased employee benefits, more marketable securities for the stockholders, and an answer to the problem of management succession, banks have commonly taken the initiative in seeking to join a holding company group.<sup>12</sup> "On the whole, banks owned and directed by holding companies have presented fewer problems as to asset condition and management than have unit banks under independent management and control," the F.D.I.C. has found. Similarly a spokesman for the American Bankers Association has referred to the "satisfactory record of achievement in the public's interest" made by group banks.<sup>13</sup>

The late 1920's, an era notable for the large number of mergers in various fields of business, was the most active period of formation of bank holding companies. Of the 90 holding companies combining three or more banks at the end of 1931, no fewer than 24 became insolvent in the next three years. 200 banks belonging to 39 groups, with deposits of almost one billion dollars were suspended from 1930 to the end of 1933. Slightly less than half of these deposits were in two Detroit banks, the First National and the Guardian National Bank of Commerce. From 1934, when one bank belonging to a group was suspended, until 1953, there appear to have been no suspensions. The F.D.I.C. had to extend almost five millions of financial aid in the spring of 1953 before a bank in Elmwood Park, Illinois, purchased a few months earlier by the Bankers Discount Corporation of Dallas, a chain of small loan companies, could re-open.<sup>14</sup>

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Research Institute, made at the request of Transamerica, *Ib.*, 118. *Barron's* remarked: "despite wild and generalized accusations against bank holding companies, nobody proved them guilty of anything but success." (May 14, 1956, p. 1).

<sup>8</sup> I, 205.

<sup>9</sup> Gaines T. Cartinhour, *Branch, Group and Chain Banking* (New York, 1931), Chs. 14, 15, 16.

<sup>10</sup> I, 376, 400, 242, 257. The First National of Minneapolis and the First National of St. Paul, the two metropolitan banks owned by the First Bank Stock Corporation participate in a greater amount of loans with non-affiliated correspondent banks than with banks belonging to the group (III, 310).

<sup>11</sup> Palmer T. Hogenson, *The Economics of Group Banking* (Washington, 1955), pp. 138-39, 145.

<sup>12</sup> II, 233-34; I, 373.

<sup>13</sup> F.D.I.C., I, 148; II, 99; A.B.A., I, 407.

<sup>14</sup> *Federal Reserve Bulletin*, XXIV (1938), 100; Hogenson. *op. cit.*, p. 163; III, 104-105.

Management and capital problems make it very difficult to start a bank holding company, according to President Thomson of the Northwest Bancorporation.<sup>15</sup> Only one of the 18 holding company affiliates regulated by the Board of Governors in 1954—New Hampshire Bankshares (started 1934)—was established after 1933. The 17 in existence in 1933 (see Table) represented 5.83 per cent of all commercial bank offices in the United States and 9.48 per cent of commercial bank deposits in the country. By the end of 1948, when Transamerica owned only 23 per cent of the stock of Bank of America (the Bank is excluded from our 1948 figures), the shares for the 17 stood at 3.78 per cent and 6.29 per cent respectively.<sup>16</sup> Six years later, on the eve of congressional action, the shares were 4.23 per cent and 6.57 per cent.<sup>17</sup> If these 17 are representative of the entire bank holding company picture, it is evident that their growth since the early '30's has not been spectacular.

## II

Clearly an evaluation of group banking involves the issue of the most desirable kind of banking structure for the United States. Three aspects of this question will be discussed in turn: the survival of independent small banks; competition in banking; and lastly, banking across state lines.

Opponents of the holding company form of organization stress the desirability of preserving small business in banking and indirectly small business in our economy. The membership of the National Federation of Independent Businesses overwhelmingly endorsed the proposition that "independent business can prosper only when it is served by many independent, locally owned competitive banks." Such banks are said to be sensitive to local needs and interests. A conflict of interest between a local and a big city customer of a bank holding company might be resolved to the detriment of the former, the House Banking and Currency Committee argued.<sup>18</sup> The desire to obtain able local management, holding companies counter, may be the inducement to buy a particular bank. Transamerica's subsidiaries make their own decisions as to whom and how much they shall lend. "You will not find any stagnation or stifling or discrimination against the local depositor or borrowers where our banks operate," boasted Belgrano.<sup>19</sup> As for

<sup>15</sup> II, 310.

<sup>16</sup> 1933 and 1948 figures compiled from V, 54, 55; Moody's *Banks*, Polk's *Banker's Encyclopedia*. Data on commercial bank deposits by state for 1933 were kindly furnished by James E. Eckert, Division of Research and Statistics, Board of Governors. Transamerica's share in the Bank of America (V, 341-342) was reduced to 11 per cent in Oct. 1949, and to nothing in 1952.

<sup>17</sup> 1954 data in II, 51-53, adjusted to include the deposits of the First National Bank of Boston in the Baystate total. Hogenson does the same (*op. cit.*, p. 49). The 1950 and 1952 situations are detailed in IV, 16-18, and II, 51-54. The 17 group banks had 12.09 per cent of all commercial bank offices and 17.89 per cent of all commercial bank deposits in the 21 states in which they did business in 1933. The corresponding ratios for the 21 states in 1954 were 9.23 per cent and 12.61 per cent.

<sup>18</sup> National Federation of Independent Business, III, 359. See also I, 508; III, 59, 141; V, 91; 1955 H.Rpt. pp. 2, 6.

<sup>19</sup> I, 273. General Contract Corp. policy, I, 255, 258. Morris Plan, III, 615. The emphasis on the independence of local management is deflated by Evans, I, 505.

local ownership, Transamerica's stockholders are mostly Californians. A majority of the shareholders of the Marine Midland Corporation live in the vicinity of one or another subsidiary in New York. 80 per cent of the owners of the First Bank Stock Corporation (Minneapolis) live in the states it serves.<sup>20</sup> The board of directors of each banking subsidiary of a holding company, moreover, is made up mostly of prominent local citizens. It is to the interest of the holding company to have the goodwill of local residents.

To "maintain competition among banks and to minimize the concentration of economic power through centralized control of banks" was one avowed purpose of a number of holding company bills.<sup>21</sup> Even the insinuation that American banking was anything other than "fundamentally and overwhelmingly competitive" was resented by the American Bankers Association. It did not hold the view that, taking the country as a whole, existing holding companies represented a concentration of economic power. No declaration of policy prefixes the 1956 law,<sup>22</sup> mainly because of the Association's opposition. Yet the intention of encouraging competition in banking and preventing undue concentration is evident. Senator Douglas argued that with the centralization of credit facilities, business in general becomes concentrated. Chairman Spence of the House Banking Committee, for years a sponsor of holding company bills, hailed the 1956 law as a first legislative step in halting monopoly in banking in any form. His committee did not hesitate to identify competition in banking with the preservation of independent unit banks. Independents view the holding company as a device to concentrate banking. The two largest Minneapolis companies combined had 55 per cent of the deposits in Minnesota and over 40 per cent of the deposits in the Ninth Federal Reserve District. Transamerica's subsidiaries had 44 per cent of the deposits in Oregon and three-fourths of Nevada's. The last is a situation which developed during the banking collapse of 1933, at the express invitation of the state authorities.<sup>23</sup>

Nevertheless, the Board of Governors did not propose the break-up of any part of existing holding companies. Governor Robertson stated that "in every situation that I know of today there is competition"; if a bank had a virtual monopoly in some places it was because no one else was willing to open additional facilities. Talk of banking monopoly came with bad grace from bankers wishing to preserve their own local monopolies, and who resented competition and the

<sup>20</sup> II, 301, 413; I, 365.

<sup>21</sup> H.R. 2674 (1955) printed in I, 1; S. 880 (1955), II, 1; S. 829 (1947), reported out of committee, VI, 1. The language was altered on the floor of the House: "eliminate" replaced "minimize" and "the undue" was placed before "concentration." (H.R. 6227, passed in the House in 1955, II, 23).

<sup>22</sup> I, 407; V, 114-115. The A.B.A. argued that the omission of the controversial preamble would increase the chance of enacting a bank holding company act. The Board of Governors went along (V, 23).

<sup>23</sup> 1955 Sen. Rept., p. 8, 10. Douglas, *Congressional Record*, CH (1956), p. 6134. Spence, *American Banker*, May 10, 1956, p. 6; a similar argument was offered by Rep. Multer, II, 369. 1955 H. Rpt. p. 2, 3. For views of the independent bankers see I, 153, 166-167, 202; III, 726; V, 106. On Nevada, see II, 381-384.

necessity to improve service, holding company officials held.<sup>24</sup> They pointed out that the size of the group banks stood in contrast to the giant metropolitan banks with their network of correspondent banks all over the country. Total deposits of at least one billion each were found at the end of 1954 in the affiliated banks of four holding companies (Transamerica's two billion heading the list) while no fewer than 18 metropolitan banks, led by the \$1¼ billion Bank of America, were in this size category. Concentration of banking power was evidently to be found outside of bank holding companies, as the Comptroller of the Currency remarked.<sup>25</sup> Transamerica considered itself in a battle with Eastern banking interests which it wished to prevent from dominating the West. Group banking was a force decentralizing banking concentration, in the view of the Northwest Bancorporation.<sup>26</sup>

Rather than enact new legislation, use the antitrust laws to deal with activities which might lessen competition or tend to create a monopoly, spokesmen for the bank holding companies suggested. Arizona's Representative Rhodes, favoring this approach, pointed out that in effect proposed bills were going to curb holding companies "without regard to the actual record of their operation." That the merger provisions of the Clayton Act did apply to bank holding companies was affirmed in the 1953 *Transamerica* case by the Third Circuit Court. Legal flaws in the 3-2 majority view of the Board of Governors, however, resulted in the Court's setting aside a Board order which would have required the corporation to rid itself of all its banking subsidiaries except for its holding in the Bank of America.<sup>27</sup>

Holding companies have been accused of flouting restrictions on branches as well as the American tradition against inter-state banks. Four of the eighteen regulated holding companies affiliates operated in several states—Transamerica, e.g., in five and Northwest in seven. Worse yet, nation-wide banking loomed as a possibility. The desirability of confining holding companies to the ownership of banks in a single state was based on the principle that anything forbidden to ordinary banks should likewise be forbidden to bank holding companies. Such an arbitrary geographic restriction did not appeal to the Board of Governors, the Treasury, and the Association of Reserve City Bankers. Interstate holding companies like Northwest had proven beneficial to the regions they served, particularly in supplying needed additional capital. The Senate Banking Committee similarly did not consider interstate companies (any more than group banks in

<sup>24</sup> Robertson, I, 96. He had not taken part in the Board's proceedings against Transamerica. For views of holding company officials see, e.g., I, 526; II, 179, 181, 238; III, 395; and the statement of an "independent" who became part of Transamerica a few months later, II, 353.

<sup>25</sup> VI, 54 and the testimony of two small town bankers bought out by Transamerica a few months later, II, 352, 479. Comptroller Gidney, II, 98.

<sup>26</sup> II, 376, 338. See also II, 347; Hogenson, *op. cit.*, p. 17, 120; Cartinhour, *op. cit.*, p. 132.

<sup>27</sup> Holding company views in II, 237, 325. Rhodes, *Congressional Record*, CI (1955), 6826. Former Governor Evans, who had been hearing officer in the Transamerica case, felt that the Clayton Act was inadequate (I, 507-9). *Transamerica Corporation v. Board of Governors of the Federal Reserve System*, 206 F. 2d 163 (3d Cir., 1953); certiorari denied 346 U.S. 901 (1953).

general) evil per se. Nevertheless, the 1956 law (as suggested by the American Bankers Association) forbids any further expansion across state lines, unless the state involved specifically authorized it by law.<sup>28</sup>

Thirteen of the eighteen holding company affiliates had non-banking subsidiaries in 1954. Some of these subsidiaries, however, were in fields closely related to banking (e.g., safe depository, bank building, liquidation of assets). The bank holding company most active in unrelated fields, Transamerica, owned such enterprises as three large insurance brokerage agencies (six other group banks were also in this business), two real estate corporations, a real estate financing corporation, and five insurance companies, including the sizeable Occidental Life and Pacific National Fire. It also held the Columbia River Packers Association, a leading salmon and tuna canner, and the General Metals Corporation, manufacturer of metal products. The only other manufacturing corporation owned by any of the eighteen groups was the Coca Cola Bottling Corporation of Lincoln, Nebraska, acquired by the Trust Company of Georgia under a foreclosure. The 1956 act—which affects many more than just these eighteen groups and involves more than just the aforementioned situations—calls upon bank holding companies to divest themselves of their voting shares in nonbanking organizations over a period of two years. Excepted is ownership, directly or through an investment company which is itself not a bank holding company, of up to 5 per cent of the voting securities of any corporation, the value of which shares does not exceed 5 per cent of the group bank's total assets. In a case like the Shawmut Association, 40 per cent of whose assets are in high-grade marketable common stock, representing in each case less than 3 per cent of the bank holding company's total assets and less than 1 per cent of the stock of any issuer, it does not have to divest itself of these investments. The Board of Governors can exempt holdings in financial, fiduciary or insurance companies whose business is "so closely related to the business of banking or of managing or controlling banks as to be a proper incident thereto"—e.g., credit and mortgage life insurance.<sup>29</sup>

Separation of nonbank subsidiaries was urged on the principle that bank holding companies should not be permitted to do what is forbidden to ordinary banks. Keeping borrower and lender at arm's length would not only safeguard depositors from unsound loans, but also protect competitors of a holding company's nonbanking business from the possibility of favoritism in access to a subsidiary bank's credit facilities.<sup>30</sup> Through its banking connections, moreover, a non-banking subsidiary could obtain confidential information about competitors doing business with that bank. That a nonbanking subsidiary might gain an

<sup>28</sup> Independents' views, III, 59, 60, 62. Treasury view, II, 98; III, 277. Board of Governors, II, 45, 78; III, 16, 41. Association of Reserve City Bankers, III, 277. 1955 Sen. Rpt., p. 10. Holding companies, I, 365, II, 135. 70 Stat. 135, sec. 3d. A.B.A. proposal, II, 289; III, 123.

<sup>29</sup> II, 62-64; IIb, 30. 70 Stat. 135-137, sec. 4. Shawmut, III, 249, 251.

<sup>30</sup> 1955 H Rpt., p. 7, 16; 1955 Sen. Rpt., p. 5. National Federation of Independent Business, III, 359. Board of Governors (McCabe) V, 59. Independent banker, VI, 33, 41-42. Spence, I, 122. Evans, I, 506. Speaker Sam Rayburn, *American Banker*, April 1, 1955, p. 6. Governor Martin, I, 14.

unfair advantage over its competitors through the insistence of the bank that a borrower patronize that subsidiary was a possibility raised by Governor Robertson. Transamerica vehemently denied the existence of such tie-in arrangements among its subsidiaries, pointing out that the antitrust laws governed here. To prevent the "fear becoming a reality," as the Senate Banking Committee expressed it, the law includes a divestiture provision.<sup>31</sup>

Ownership of local businesses by the unit bankers, directors and stockholders is not forbidden, the holding companies pointed out.<sup>32</sup> Nonbanking assets, in their view, represented the diversification principle at work. Banking subsidiaries were thereby strengthened.<sup>33</sup> Instead of ordering divestiture, the holding companies proposed increased restrictions on, or total elimination of, intra-corporate loans. Northwest Bancorporation had never borrowed from its affiliated banks. Transamerica prohibited its nonbanking subsidiaries from borrowing from its banks. Before it bought Columbia River Packers in 1946 the latter used to deal primarily with Transamerica's First National Portland; since then it stopped doing so.<sup>34</sup>

Self-dealing is a problem not confined to bank holding companies. The practice had led to more losses in independent banks than in holding company subsidiaries, the F.D.I.C. reminded Congress. The 1956 act makes it unlawful for a bank to invest in any obligations of or make a loan to a parent or its sister subsidiaries. Previously banks belonging to the Federal Reserve System had been permitted to lend to the parent "holding company affiliate" on specified collateral, an amount not exceeding 10 per cent of the bank's capital and surplus. As this law had "worked very well in practice," the Comptroller of the Currency could not see the need for any more rigorous restrictions. Once more, though no widespread abuse of "upstream" loans had been found, the law would "prevent the possibility of any such abuse," the Senate Banking Committee observed.<sup>35</sup>

### III

A company controlling as little as 25 per cent of the stock, or controlling in any manner the election of a majority of the board of directors, in at least two banks—national or state—is subject to the 1956 law. The law has been called "discriminatory" by Senator Morse who agrees with Transamerica that this bank holding company is the primary target. "The worst piece of class legislation" in his 11½ years in the Senate, was Capehart's reaction.<sup>36</sup>

<sup>31</sup> Robertson, III, 24; II, 64-65. See also independent banker Harding, II, 124. Transamerica, II, 462; III, 683. 1955 Sen. Rpt., p. 5.

<sup>32</sup> V, 152-153; II, 378; III, 395.

<sup>33</sup> I, 280; III, 680; I, 155.

<sup>34</sup> I, 261; V, 152. Northwest policy, I, 460. Transamerica policy I, 279-280; II, 466. Most of Columbia River's insurance was placed outside the Transamerica subsidiaries. Less than 10 per cent of the deposits of its major nonbanking subsidiaries were in Transamerica banks (II, 425).

<sup>35</sup> F.D.I.C., II, 100. The recent self-dealing episode involving Bankers Discount is described in III, 104-105. 70 Stat. 137-138, sec. 6. Comptroller, III, 51, 55; at this time the F.D.I.C. concurred (III, 105). In 1955, however, it supported the provision which became law (II, 100). Legal requirements on loans to affiliates, 12 U.S.C. 371c. 1955 Sen. Rpt., p. 4.

<sup>36</sup> 70 Stat. 133, sec. 2a. A committee of experts appointed by the Association of Reserve

Coverage of corporations owning but a single bank had been recommended by the Board of Governors because even in this situation the combination of banking and nonbanking interests could involve "potential abuses." With a 25 per cent stock ownership in a single bank as the criterion, at least 163 groups with 26 billions in deposits at the end of 1954 would have been covered. A 50 per cent one bank test, which the Board was also willing to support, would have encompassed 116 groups (and 123 fewer banking offices) with aggregate deposits of 23 billions. However, as finally enacted, the law covers 46 bank holding companies with 14¼ billions of deposits at the end of 1954.<sup>37</sup> Excluded thereby are such organizations as the Grace National Bank of New York (\$126 million of deposits) owned by the \$375 million W. R. Grace & Co., and the Gimbel Brothers Bank and Trust Co. of Philadelphia (\$15 million of deposits) owned by the department store chain with \$161 million of assets. It should be noted, however, that if a one-bank holding company wishes to acquire additional banks, it must secure the approval of the Board of Governors; as soon as it becomes the owner of two banks it is subject to the 1956 act's provisions.

Four companies were specifically excluded from the divestiture requirements of the 1956 law. The Equity Corporation owns a variety of industrial firms (including Bell Aircraft), real estate and minerals subsidiaries as well as the Morris Plan Corporation, a bank holding company. The rationale was that Equity was already supervised adequately under the Investment Company Act of 1940; its regulation by the S.E.C. was "closely akin to the purposes" of the 1956 law. Congress has the difficult task of explaining why the privilege was not extended to other bank holding companies which might wish to reorganize along the pattern permitted Equity, as Belgrano pointed out. To prevent the evasion of regulations under the Bank Holding Company Act, May 15, 1955 was adopted as the cut-off date according to the somewhat contradictory statement of the Senate Banking Committee.<sup>38</sup> Another exception is the Trust Company of Georgia, owner of about 7 per cent of the shares of Coca Cola International (acquired years ago in an underwriting operation), the bottling company in Lincoln referred to earlier, an installment finance company, as well as six national banks. Under the same category of exemption (shares owned before May 9, 1956 by "a bank which is a bank holding company, or by any of its wholly owned subsidiaries") comes the First National Bank Trustees, a holding company owning Louisville's First National Bank, the Kentucky Trust Co., an investment company, and a small fire insurance company. As it happens that a competing bank, the largest in the state, also owned a fire insurance company, Congress in effect placed both on an equal footing in this respect. Lastly an exemption was given Consolidated Naval Stores Co. with investments in citrus groves, cattle, grazing lands, and owner of 34 per cent of the stock in the Barnett National Bank (and the related

City Bankers had recommended a 15 per cent test, which was embodied in S. 2318 of 1950. The Board of Governors would have been given powers to exempt etc. (III, 291-293). Morse, *Congressional Record*, CII (1956), 6216-6217; Capehart, *ibid.*, 6234.

<sup>37</sup> Board of Governors, II, 45, 76; Transamerica agreed. Data on scope, II, 54, 59-60. IIb, 60-61, 112-113. Spence attempted to justify the one bank exemption (I, 569).

<sup>38</sup> Morris Plan, II, 162-163. Belgrano, IIb, 62-64. 1955 Sen. Rpt., pp. 5-6, 70 Stat. 133, sec. 2 (a).

TABLE I  
RELATIVE IMPORTANCE OF 17 GROUP BANKS IN THE STATES  
WHERE THEIR AFFILIATES ARE LOCATED

	% of Offices of Group Banks to Offices of All Commercial Banks in State			% of Deposits of Group Banks to Deposits of All Commercial Banks in Same State; End of		
	1933	1948	1954	1933	1948	1954
Arizona						
Transamerica Corp.	—	12.50	19.35	—	20.50	21.34
California						
Transamerica Corp.	38.94	11.06	4.30	27.77	2.26	4.14
Florida	9.02	6.25	5.28	33.03	16.09	12.95
Atlantic Trust Co.	5.55	3.65	3.08	22.94	10.65	8.22
Barnett Nat. Securities Corp.	3.47	2.60	2.20	10.09	5.44	4.73
Georgia						
Trust Co. of Georgia Associates	2.01	1.42	2.44	10.88	10.51	12.43
Idaho						
First Security Corp.	18.89	24.21	27.45	29.66	31.10	32.50
Iowa						
Northwest Bancorporation	.90	.48	.48	12.84	7.02	6.17
Kentucky						
Trustees, First Nat. Bank of Louisville	3.10	2.61	3.23	11.33	7.89	8.98
Massachusetts	27.61	35.04	36.89	59.97	47.45	49.06
Baystate Corp.	19.36	22.22	24.39	47.57	36.52	37.98
Shawmut Association	8.25	12.82	12.50	12.40	10.93	11.08
Michigan						
First Bank Stock Corp.	.79	—	—	1.35	—	—
Minnesota	15.80	13.40	13.72	80.56	56.59	57.47
Bank Shares, Inc.	.72	.44	.58	.54	1.55	2.28
First Bank Stock Corp.	6.89	6.26	6.57	46.35	29.81	28.55
Northwest Bancorporation	8.19	6.26	6.57	33.67	25.23	26.64
Montana	22.48	16.96	17.27	61.78	44.40	44.03
First Bank Stock Corp.	11.63	10.71	10.91	45.55	32.92	31.32
Northwest Bancorporation	10.85	6.25	6.36	16.23	11.48	12.71
Nebraska						
Northwest Bancorporation	1.74	1.20	1.19	19.87	8.86	9.68
Nevada						
Transamerica Corp.	—	60.00	63.33	—	77.43	77.37
New York						
Marine Midland Corp.	5.38	7.13	8.93	4.20	3.50	4.41
North Dakota	17.33	12.57	12.99	53.74	28.36	29.17
First Bank Stock Corp.	10.40	7.43	7.91	27.23	13.57	14.87
Northwest Bancorporation	6.93	5.14	5.08	26.51	14.79	14.30
Ohio						
BancOhio Corp.	3.06	3.69	3.94	4.88	5.08	5.97
Oregon						
Transamerica Corp.	13.49	37.74	37.30	29.16	44.59	45.11
South Dakota	14.76	14.22	14.93	45.45	32.12	32.44
First Bank Stock Corp.	5.24	4.13	4.52	12.86	9.09	8.78
Northwest Bancorporation	9.52	10.09	10.41	32.59	23.03	23.66

TABLE I—Continued

	% of Offices of Group Banks to Offices of All Commercial Banks in State			% of Deposits of Group Banks to Deposits of All Commercial Banks in Same State; at end of		
	1933	1948	1954	1933	1948	1954
Utah						
First Security Corp.	17.39	18.42	21.84	27.35	23.76	23.61
Washington	15.52	25.42	29.17	31.32	30.70	32.07
Marine Bancorporation	5.48	12.20	15.97	15.81	18.18	18.72
Northwest Bancorporation	.91	—	—	6.06	—	—
Old National Corp.	8.22	7.32	6.94	8.55	6.47	7.02
Transamerica Corp.	—	4.06	4.51	—	5.20	5.40
Union Bond & Mortgage Co.	.91	2.03	1.74	.90	.85	.93
Wisconsin	11.86	2.99	2.98	40.77	23.13	21.97
Northwest Bancorporation	1.48	.14	.14	1.34	.58	.65
Wisconsin Bankshares Corp.	10.38	2.85	2.84	39.43	22.55	21.32
Wyoming						
First Security Corp.	3.23	1.82	1.89	3.88	1.33	1.03

Source: See footnotes 16 & 17.

Securities Corporation—see Table I) and 80 per cent of the small Tropical State Bank of Sebring, Florida.<sup>39</sup>

The law does not touch chain banking, a situation where a number of banks are owned by an individual or a partnership. The growth potential of such organizations, it was thought, is limited by the fact that they are not of perpetual duration, and are financed out of personal resources rather than an exchange of stock. Analogously, estates were exempted. The Alfred DuPont-Ball testamentary trust embraces the "Florida National Group" of 23 banks with almost half a billion in deposits, and a variety of nonbank enterprises in Florida. Eventually—during its first twenty one years it has not—it will dispense funds for charitable purposes. Also outside the law are holdings of religious bodies (e.g., the Mormon Church) and of labor unions (e.g., the banks in New York and Chicago owned by the Amalgamated Clothing Workers). On the other hand, some eight mutual savings banks which had been excluded under the terms of several earlier bills, are affected by the 1956 law.<sup>40</sup>

These exemptions and special provisions were criticized by the President when he signed the bill. Congress is unlikely to take up with alacrity his recommendation for additional action. Expediency—the desire to enact a bill despite acknowledged faults (particularly in an election year, one suspects)—dictated the

<sup>39</sup> Trust Co. of Georgia, Hb, 19-21, 30-33, 70 Stat. 136, sec. 4(c)(4) and (5). First National Bank Trustees, H, 386-400. Consolidated, H, 252-256.

<sup>40</sup> H, 72-73, 1955 Sen. Rpt., p. 7. DuPont, Hb, 64-66; *Congressional Record*, CH (1956), 6234-6237. Mormons, Hb, 114-115, 70 Stat. 133, sec. 2b. Savings banks were exempted, e.g. by the 1950 bill (V, 2) and the bill passed by the House of Representatives in 1955 (H, 24). Estimate by Governor Robertson, I, 120.

compromises embodied in the legislation, as Robertson of Virginia, chairman of the Senate subcommittee on banking, admitted with admirable candor.<sup>41</sup>

Supporters of holding company legislation felt that there were two basic gaps to be filled: (1) the unrestricted ability of holding companies to acquire additional banks and the concomitant possibility of concentration of banking facilities in a given region, and (2) the ability of bank holding companies to own non-banking enterprises in unrelated industries.<sup>42</sup> Let us examine the new law in the light of these desiderata.

A bank holding company may not acquire additional banks (even non-member, non-insured) or merge with another bank holding company without the approval of the Board of Governors. When application is made, the Board notifies the Comptroller of the Currency or the state authority (depending on the source of the charter of the bank to be acquired). Disapproval by the chartering agency does not prevent the Board from coming to its own decision after a hearing. The decision is based on five criteria:

- "(1) The financial history and condition of the bank holding company and the bank concerned;
- (2) The prospects of the bank holding company and the bank concerned;
- (3) The character of the management of the bank holding company and the bank concerned;
- (4) The convenience, needs, and welfare of the communities and the area concerned; and
- (5) Whether or not the effect of the proposed transaction for which approval is desired would be to expand the size or extent of the bank holding company system involved beyond limits consistent with adequate and sound banking, the public interest, and the preservation of competition in the field of banking."<sup>43</sup>

Particularly noteworthy is the last clause of (5): what is its bearing on a one bank town situation? on a sleepy oligopoly involving several independent unit banks in an area?

Out-of-state banks may not be acquired unless legislation of the latter state specifically permits it; today none does.<sup>44</sup> Congress saw fit to ignore the various benefits enterprises such as the Northwest Bancorporation have brought to their region. It is open to the holding companies to persuade state legislatures, but this may be a long, drawn out affair at best in the face of powerful local interests.

<sup>41</sup> *New York Times*, May 10, 1956, p. 43; White House Press Release, May 9, 1956. Sen. Robertson, Hb. 77, 80, and his article "The Bank Holding Company Act," *Banking*, June 1956, XLVIII, p. 157. Banker Huntington had called attention to the political aspects in II, 191.

<sup>42</sup> II, 79; III, 15, 254.

<sup>43</sup> Board of Governors of the Federal Reserve System, Regulation Y (1956), sec. 4h; the language is almost identical with 70 Stat. 135, sec. 3(c). Sen. Robertson feels that (5) is the most important criterion (*Banking*, loc. cit., p. 42). Criteria for voting permits for holding company affiliates under the 1933 law are essentially similar to (1), (2) and (3) in the 1956 law.

<sup>44</sup> 70 Stat. 135, sec. 3(d); *Journal of Commerce*, May 10, 1956, p. 6.

An advantage is given to existing group banks over any would-be newcomers, the extent of which depends on the Board's attitude toward holding companies. Feverish activity by Transamerica in the months preceding the passage of the 1956 Act (except in California) strengthened its position in every state in which it had previously owned banks, and brought it for the first time into Utah, Idaho, Montana, Wyoming, Colorado and New Mexico. Some New York bankers were of the opinion that Marine Midland's "monopoly" position in that state would be frozen.<sup>45</sup> Certainly such would be the case with a Board hostile to the holding company device.

The new law's divestiture requirements affect five companies, Transamerica being the most important.<sup>46</sup> In the other instances Congress was apparently impressed by resulting special hardships. The basis of the solicitude for a favored few is not entirely clear. The divorcement of commercial banks belonging to the Federal Reserve System from their securities affiliates was ordered in the Banking Act of 1933, following the revelation of unsavory and unsound practices resulting from the linkage of commercial with investment banking. No record of abuses was unfolded to warrant the 1956 provision. Particularly in view of the blanket ban on upstream loans, one might ask what harm would result from allowing all bank holding companies (not merely a favored few) to retain their nonbanking subsidiaries. Congress was concerned with the possible dangers that might arise out of the relationship.

A familiar justification for the divorcement of these subsidiaries as well as for the out-of-state provision is that bank holding companies ought not to be permitted to do that which ordinary banks may not do. In certain important respects, however, the situation of a group bank is not identical with that of a branch banking system. To a large extent the holding company uses the money of its stockholders, while a bank is using its depositors'. If Northwest, e.g., were a single national bank and its affiliates branches, the loan limit of each branch would be \$9,300,000 instead of the existing maximum one-third that amount in the case of its largest affiliate. A branch, moreover, could lend any desired amount, irrespective of total deposits in that branch. In a holding company arrangement, furthermore, each bank has its own local board of directors; in branch banking there is one board for the network.<sup>47</sup>

Particularly in areas of rapid growth and capital deficit, the utility of the holding company device, with its geographic diversification possibilities as an inducement to investors, should not be overlooked in connection with the problem of supplying bank capital. Ownership by the holding company of assets other than

<sup>45</sup> *Congressional Record* CH (1956), 6209; *Moody's Banks*; Standard and Poor Corporation Research. Marine Midland, *New York Times*, May 10, 1956, p. 43. See also *ibid.*, Jan. 29, 1956, Sec. III, p. 1.

<sup>46</sup> *Times*, May 10, 1956.

<sup>47</sup> III, 203-204; I, 410, 480, 525. The author does not mean to pass on the respective merits of group banking and branch banking. He is not to be interpreted as implying that one is superior to the other or vice versa.

bank stock may also strengthen the subsidiary banks in periods of economic distress.<sup>48</sup>

The need for regulation, then, arose not so much because of actual injury, but out of fear of potential abuses by bank holding companies. In seeking to control an interesting experiment,<sup>49</sup> the law may have gone too far, notably with respect to inter-state bank acquisition, upstream loans and nonbanking interests. Perhaps the periodic reports to Congress called for by the law will point the way to desirable changes.

<sup>48</sup> Cf. H. 301; Hb. 53. In effect the 5 per cent provision in the 1956 act takes cognizance of this argument.

<sup>49</sup> Cf. Hogenson, *op. cit.*, p. 189.

## REGIONAL IMPORTANCE OF FOREIGN TRADE IN MANUFACTURES

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The extent to which a region shares an interest in the external trade of the United States depends principally on the industrial composition of the region and the commodity composition of our foreign trade. Being a large country, the United States has a number of regions which are varied in their industrial structures both as a consequence of differing factor endowments and differing stages of economic development. Given the level and composition of goods in foreign trade the participation therein of these heterogeneous regions will vary, it is to be expected, according to their industrial structures. Over time, however, the industrial structure of regions in this country evidence secular change, and the composition of trade also displays a diversity of trends among its many commodities. Under these conditions it seems pertinent to ask what has been and is now the extent of participation of various regions of the country in foreign trade.

It is true that not all the factors affecting a region's stake in foreign trade are accounted for in terms of the structure of production and trade. As our quantitative knowledge of other factors expands we should certainly like to know if the locational pattern of domestic producers is itself influenced by the fact that they produce for export or face competing imports. Domestic geographic price differentials may also modify the regional pattern of participation in foreign trade. But these factors stand only as qualifications to the importance of the industrial structure of the regions and the commodity composition of exports and imports as the chief determinants of the geographic importance of foreign trade within the United States.

For many years the sectional interests in foreign trade appeared to be rather clear and produced articulate sectional responses in respect to trade policy. Southern states espoused a free trade policy to provide foreign countries a source of dollars to purchase at favorable terms of trade the cotton, tobacco and other products which represented the staples of the South. The North, on the other hand, vigorously sought protection for its manufactures.

In recent years the sectional importance of foreign trade has become less obvious. In the first place, the relative importance of many industries in the various regions of the country has altered. The pace of industrialization in the South has quickened. Many Northern establishments have moved their plants South. Western states have continued to increase their participation in many lines of activity. Because of the differing rates of expansion among regions and differentials in growth rates of different industries within regions as well, we

\*The writer is indebted to Professors Herbert M. Diamond and James Wert of Lehigh University for criticisms of an earlier draft of this paper.

must suppose that the participation of regions in the production of goods entering trade would change.

Secondly, the diverse trends which appear in the commodity composition of our foreign trade further complicate an assessment of the effects of the shifting industrial composition of regions. Exports in all economic classes have shown secular growth in dollar value, but exports of crude materials have declined in relative importance while finished manufactures have increased in proportion to the total. Those regions of the country in which the production of such crude materials as raw cotton, unmanufactured tobacco and coal are concentrated must have experienced pressures making for a relative decline in their share of the export market. The production of most of these crude materials is concentrated in the South and as a result this has tended to diminish the participation of that area in the production for export. On the other hand, the production of finished manufactures is concentrated in the North, so that region tends to secure a larger portion of the export pie. Imports of finished manufactures, for their part, have tended to constitute a declining proportion of total imports; this situation tends to reduce the proportion of total imports competitive with the output of the industrial Northeast.

The outcome of these factors—the declining importance of manufactured imports as a proportion of total imports, the increasing importance of manufactured exports relative to total exports, and the varied shifts which have taken place in the regional distribution of domestic production—is a matter of statistical determination. The appraisal is the more complicated since, among exports, imports and regional structure, there are diverse trends in different commodities and manufacturing industries.

Being restricted primarily to a study of the manufacturing components of foreign trade in selected years, the statistical measures presented in this paper are limited in time and scope. Furthermore, our concern is with the location of domestic producers only and omits from discussion the regional interests of consumers in international trade. Our knowledge of the locational pattern of consuming industries and of individuals is one in which there has been little done in the nature of preparatory research in comparison with our knowledge of the locational patterns of producing industries. Finally, no account is taken of the extent to which tariffs or other impediments to trade have themselves altered the regional distribution of the production of goods entering trade: too many other responsible factors are involved to permit identification of their separate influence.

#### *Relative Importance of Foreign Trade, 1947 and 1952*

The location of industries which are important in the manufacture of exports or of outputs which compete with imports is obtained, in this study, by ascertaining the extent to which various regions produce net outputs of the kinds which enter exports or compete against imports. The total exports of each of the individual industries are pro-rated to each of the nine regions according to the share of each region in the total value added of each of the industries. A similar procedure is followed for import-competing products.

These weighted value-added relatives of each industry in a region are summed and expressed as a percent of the sum of the weights (total exports or competing imports in manufactures, depending on which weighting system is used). These measures indicate the relative geographic distribution of the industries of final fabrication which produce outputs important in the foreign trade of the United States.

These measures may be viewed as indicative of the relative distribution of the actual geographic origin of exports or the regions against which imports compete. This interpretation of the results, however, implies that each industry in each region is directly affected by foreign trade proportionately to its output. The proportionality assumption is unnecessary but sometimes convenient to employ, particularly if individual industry deviations from proportionality may be regarded as offsetting within a region. The author has discussed such an interpretation of the results elsewhere.<sup>1</sup>

The system of weighting the geographic distribution of value added calls for some comment. The export values used in the weighting system are gross in respect to the domestic industry of final fabrication. Their value reflects the contribution not only of the industry of final fabrication in manufacture (the export industry), but also of those manufacturing and non-manufacturing industries which contributed inputs to the export industry or assisted in the preparation of the goods for export. The contribution of these industries (which may be called the export-supporting industries) is not separable from that of the export industry. Where the value added in manufacture by the export industry is a high proportion of the value of its shipments, or where the export-supporting industries are located in the same regions as those of the export industry itself, gross value weights are not inappropriate. The indirect contribution of regions in the production of goods entering foreign trade can, in principle, be taken into account by the construction of regional input-output tables; but present regional input-output matrices are too fragmentary for application along these lines. Similar comments also apply to competing imports.

For some purposes a knowledge of the locational distribution of industries directly involved in the production of goods either exported or facing competing imports may even be preferred. As it has been noted in the *New England Business Review*,

It may well be that the importance of foreign trade is best appraised in terms of the locations and firms which are more directly involved. These are the points at which some part of total employment relies directly upon the export market or upon the inflow of foreign raw materials. They are the areas on which the direct impact of any decline in foreign trade would fall. The first burden of adjusting to any shrinkage in exports or imports would be theirs. Such regions have a stake in foreign trade which is more varied and more vital than those whose contribution is more roundabout.<sup>2</sup>

<sup>1</sup> Philip J. Bourque, "The Domestic Importance of Foreign Trade of the United States, by Producing Regions, Manufacturing Sector, 1947," *The Review of Economics and Statistics*, November 1954, Vol. XXXVI, No. 4.

<sup>2</sup> Federal Reserve Bank of Boston, "Foreign Trade in the New England Region," *New England Business Review*, August 1956.

TABLE 1  
ESTIMATED PERCENTAGE DISTRIBUTION BY REGIONS OF  
EXPORTS AND COMPETING IMPORTS, MANUFACTURING  
INDUSTRIES, UNITED STATES, 1947 AND 1952

Regions	Value Added	Exports			Competing Imports		
		Based on 330 I.O. industries <sup>a</sup>	Based on 46 leading export industries <sup>b</sup>		Based on 330 I.O. industries <sup>a</sup>	Based on 36 leading import industries <sup>b</sup>	
		1947	1947	1952	1947	1947	1952
New England	9.1	7.3	5.9	5.2	6.7	6.4	8.7
Middle Atlantic	28.4	23.5	21.2	21.7	17.4	17.1	21.5
East North Central	31.3	31.4	34.5	38.5	12.6	12.6	15.9
West North Central	5.7	6.8	7.7	5.9	3.8	4.8	4.3
South Atlantic	9.1	11.7	13.0	9.7	10.5	12.0	9.5
East South Central	3.8	4.0	3.8	3.0	5.2	5.4	4.8
West South Central	4.0	6.5	6.4	7.9	28.6	25.9	16.1
Mountain	1.1	1.2	1.5	1.9	3.5	5.1	7.6
Pacific	7.5	7.6	6.1	6.2	11.7	10.7	11.6
United States	100.0	100.0	100.1	100.0	100.0	100.0	100.0

<sup>a</sup> Based on trade statistics for exports and competing imports (including territorial trade).

<sup>b</sup> Based on trade estimates excluding territorial trade. The 46 leading export industries and 36 leading industries affected by competitive imports are defined by Irving B. Kravis, *op. cit.*

The definitions of the industries are those employed in input-output analysis and the regions follow the usual census terminology.<sup>3</sup> The classification of foreign trade statistics in terms of the input-output code was accomplished by the Bureau of Labor Statistics. The data for 1947 are based on a 330 industry classification of total manufacturing exports and competing imports, while for the year 1952 foreign trade data for selected individual industries were taken from Kravis.<sup>4</sup>

As one would expect in view of the industrial configuration of the regions of this country, most of the export-oriented industries of the United States are located in the regions of New England, Middle Atlantic, and the East and West North Central, as shown in Table 1. These four regions included 69 per cent of the export-weighted outputs in manufacturing in 1947. On the other hand, the import-weighted outputs located in these regions were but 40 per cent of the United States total. In 1952 the participation rate of these four regions combined

<sup>3</sup> For the industry definitions see *Detail Listing of Industries for the 1947 Interindustry Relationship Chart as of April 1, 1951*, Division of Interindustry Economics, Bureau of Labor Statistics. Regions are defined in the *Census of Manufacturers, 1947*, Vol. 1, p. 30.

<sup>4</sup> Irvin B. Kravis, "Wage and Foreign Trade," *The Review of Economics and Statistics*, February 1956, Vol. XXXVIII, No. 1.

was 71 per cent in respect to exports and 50 per cent for import-competing industries. Between these two periods the Northeast increased its participation in the production of outputs which enter exports or which face competitive imports. In both years, however, the North's participation in the production of goods which face competitive imports is surprisingly low in view of the fact that this area turned out 74 per cent of the value added in manufacture in 1947.

The South has a stake in foreign trade greater than their output in manufactures would lead us to expect. An estimated 22 per cent of the United States exports in 1947 originated in the three regions of the South, whereas the South's contribution to value added in manufacturing was but 17 per cent; in 1952 this area's share in exports was 21 per cent. In respect to imports the proportion competing against Southern output was even more unexpected: 44 per cent in 1947 and 30 per cent in 1952. Evidently the industrial structure of manufacturing in the South exposes this area to considerable competition from abroad.

That the South should emerge with an industrial structure oriented toward the production of goods competitive with imports to the extent shown is not so surprising considering the widely held notions in respect to its comparative advantages. Labor in that region is a relatively cheap factor of production; specialization within manufactures is toward the production of relatively labor-intensive products. But if, as is widely believed, United States imports from abroad are oriented toward labor-intensive goods, these imports will tend to be more competitive with the South's industrial structure than the more capital-intensive industrial structure which characterizes the Northern regions. The regions of the United States which have the most to fear from "cheap foreign labor" are the competing groups at home.

A line of inquiry which seems worthwhile to pursue is the question why, between 1947 and 1952, the proportion of export-weighted outputs of the 46 leading export industries in the South fell from 23 per cent to 21 per cent, and the proportion of import-weighted outputs among the 36 leading import-competing industries fell from 43 per cent to 30 per cent in that region.

The extent to which a region participates in the production of goods which enter exports or compete against goods imported depends principally (1) upon the composition of the foreign trade and (2) upon the industry mix of the region. Since we have held the industry mix of the regions constant by distributing exports and competing imports into regions by the 1947 value-added ratios in both 1947 and 1952, any differences in these participation ratios must reflect changes in the composition of foreign trade. The hypothesis investigated is that the increased importance of the North's participation, and the diminished participation of the South in export and import-competing industries are attributable to the shifting composition of foreign trade from nondurable goods which are relatively more important to Southern industry, as shown in Table 2, toward durable goods in which Northern industry concentrates.<sup>5</sup>

<sup>5</sup> The classification of industries as producers of durable goods and nondurable goods follows that employed in the Federal Reserve Index of Industrial Production, e.g., durable goods are those made primarily of wood or metal.

TABLE 2  
PROPORTION OF OUTPUT OF A DIVISION CLASSIFIED AS  
DURABLE OR NONDURABLE GOODS, 1947

Division	Durable	Nondurable	Total
North	55	45	100
South	31	68	100
West	52	48	100

Source: *Census of Manufactures, 1947*. Output is measured by value added.

Among the 46 leading export industries durable goods exports fell 2½ per cent, while the exports of nondurable goods fell 27 per cent between 1947 and 1952. Since Southern manufacture is oriented toward the production of nondurables, the South would be expected to bear a relatively greater impact from this decline in exports. On the other hand, durable goods imports rose 200 per cent, while the imports of nondurable goods rose but 59 per cent. The North would bear the greater proportion of the increase in competitive imports since durable goods compose a larger proportion of its manufactured outputs. Table 3 describes the regional breakdown of the durable and nondurable goods in manufacturing ex-

TABLE 3  
PERCENTAGE DISTRIBUTION OF EXPORTS, COMPETING IMPORTS  
AND VALUE ADDED, GEOGRAPHIC DIVISIONS,  
UNITED STATES, 1947 AND 1952

Industries	Value Added (all industries)	Leading Exporters*		Leading Importers*	
	1947	1947	1952	1947	1952
Durable Goods					
North	80.5	83.9	84.8	43.0	43.4
South	10.8	8.7	7.6	25.7	26.9
West	8.8	7.5	7.7	31.4	29.7
	100.1	100.1	100.1	100.1	100.0
Nondurable Goods					
North	70.0	54.1	52.3	40.2	54.7
South	24.0	38.4	39.1	49.0	32.7
West	6.0	7.5	8.6	10.7	12.6
	100.0	100.0	100.0	99.9	100.0
Total					
North	74.5	69.3	71.3	40.9	50.4
South	16.9	23.2	20.6	43.3	30.4
West	8.6	7.5	8.1	15.6	19.2
	100.0	100.0	100.0	99.8	100.0

\* Based on 46 leading exporters and 36 leading import-competing industries as defined by Kravis, Irving B., *op. cit.*

ports and in competing imports imputed to the North, South and West. The South's participation in competing imports of nondurable goods fell from 49 per cent to 33 per cent, while it increased (slightly) its participation in durable goods imports. With a decline in its participation rate in nondurable goods, combined with a decline in nondurable goods as a proportion of total competing imports, the effect is to reduce the overall participation rate of the South in competing imports from 43 per cent to 30 per cent. A similar examination of the export proportions suggests that the shifting importance of durable and nondurable goods also explains the much lesser decline of the South in the export participation rate.

To summarize, the participation of Southern industry in the production of export-weighted and of import-weighted outputs showed declines between 1947 and 1952. Evidently these declines are associated with an increase in the proportion of durable goods in both exports and competing imports; in addition, the commodity composition of imported nondurable goods shifted to resemble more closely the nondurable industry mix found in the North. It is still true, however, that the South participates in the production of exports and in the kinds of goods imported to a greater extent than its proportion of United States value added would lead one to expect. Cyclical changes in the levels and composition of exports and competing imports may be expected to change the participation of regions in foreign trade, both absolutely and relatively.

#### *Long-term Trends: 1900, 1929, 1947*

Information needed to trace the long-term changes in the foreign trade participation rates of regions is cruder for earlier than for more recent years. Trade statistics in an industrial classification are available only in terms of major industry groups for earlier years. Because value-added series could not be obtained on a regional basis in all years, the imputations of trade into regions are made on the basis of regional participation ratios in employment in each major industry group in manufacturing.<sup>6</sup> These trade-weighted employment distributions, aggregated for all manufacturing industry groups in each region, measure the regional distribution of employment in major industry groups which produce outputs exported or subject to competing imports. At best the estimates developed from the available data represent only rough approximations; it would seem especially desirable, if statistics were available, to take into account re-

\*The foreign trade data are from the following sources: 1900—*Twelfth Census of the United States, 1900*, Vol. VII, *Manufactures*, Part I, p. clxx (14 industrial groups); 1929—an unpublished tabulation prepared by Solomon Fabricant (18 industrial groups); 1947—a consolidation to the 20 major industry group level from the 330 industry tabulation prepared by the Bureau of Labor Statistics.

For the years 1900 and 1929 the percentage distribution of average wage-earner employment in each region for each group was calculated from the Census reports for the respective years. See also Richard A. Easterlin, *Basic Tables on Manufacturing Activity, by States, 1869-1947*. (Mimeographed.) For the year 1947 the distribution of the number of employees in each industry group according to region was available directly from the Census.

TABLE 4  
PERCENTAGE DISTRIBUTION OF EXPORTS, IMPORTS, AND  
EMPLOYMENT, MANUFACTURING INDUSTRIES, BY  
REGIONS, UNITED STATES, 1900, 1929, 1947

Regions	1900			1929			1947		
	Exports	Imports	Employment	Exports	Imports	Employment	Exports	Imports	Employment
New England	13.7	20.2	18.2	12.2	15.0	12.6	9.0	8.1	10.3
Middle Atlantic	32.3	34.9	34.3	28.9	30.0	29.7	24.6	25.8	27.7
East North Central	25.1	19.0	23.1	27.4	23.5	29.2	33.6	24.3	30.2
West North Central	8.6	6.6	5.5	6.8	8.2	5.3	5.5	7.7	5.5
South Atlantic	8.6	9.9	7.5	8.1	9.8	9.7	10.7	13.0	10.7
East South Central	3.4	3.1	3.6	3.8	3.5	3.9	4.2	5.4	4.4
West South Central	3.1	2.5	2.3	4.5	3.2	3.2	4.7	6.4	3.8
Mountain	1.2	.9	.8	2.0	1.3	1.0	1.0	1.6	1.0
Pacific	3.9	2.9	2.6	6.4	5.4	5.3	6.7	7.8	6.4
United States	99.9	99.9	99.9	100.1	99.9	99.9	100.0	100.1	100.0

gional specialization of production within major industry groups as was possible in the 1947-52 comparisons.

Even these crude measures of the long-term trends in the location of industries which produce goods exported or which face competing imports establish the existence of secular changes in the participation rates in the various regions. The differences in the levels of these rates in the export and in the import-competing industries, presented in Table 4, reflect the combined influence of changes in the commodity composition of trade and the industrial structure of regions.

That there have been wide disparities in the participation of regions in foreign trade is, in part, a reflection of the fact that the manufacturing activities of these regions are of unequal importance. A comparison of the participation ratios in trade and those in employment in each of the regions indicates that the two move in close correspondence. Certainly the extent to which a region shares in the production of goods entering foreign trade depends in part upon its relative size, construed here in terms of the region's proportion in total manufacturing employment. It is surprising, however, that trends in the employment and trade participation rates show such close correspondence in view of the diverse trends which exist among the industries within each region and among exports and imports of the country.

An extended analysis of the regional and commodity changes which have taken place to produce the variation observed is not undertaken here. Suffice it to say that the determinants of comparative advantage and economic development are sufficiently complex to make empirical generalizations concerning causes quite beyond the range of the present study. Even the more modest goal

of description bristles with difficulties which are sufficiently challenging to confine the study to the presentation of the results obtained and the limitations attached. Nevertheless, the implications of the results in respect to regional structure are sufficiently important to warrant further exemplification.

New England may be taken as a case in point. New England has experienced declines in its participation rates in total United States employment by varying degrees in every industry group. In 1900 this region accounted for 18.2 per cent of employment in manufactures but for only 10.3 per cent in 1947. During this time the rapid rise in exports of some New England industries tended to increase this region's participation in the export market—the relatively small decline in New England's employment rate in the machinery industry is more than offset by that industry's large expansion of its proportion of total United States manufacturing exports. Yet, in too many of the industries in New England were United States exports declining (or but slowly rising) as a per cent of total manufacturing exports with the net result that this region's participation rate in exports has declined from 13.7 per cent to 9.0 per cent. But it is notable that the decline in the export participation rate is less rapid than the decline in the employment rate.

The decline in the participation rate of New England in United States imports was greater than its decline in the employment rate. In 1900 New England's participation in import-competing industries was 20.2 per cent, while in 1947 it had declined to 8.1 per cent. To a considerable extent this decline is attributable to the exodus of the textile industry from New England, together with the fact that textile imports (including apparel) have been of lessening importance in total manufacturing imports. Both as a consequence of the shifting regional structure of employment and the shifts in the composition of imports, in textiles and other industries as well, New England today has an industrial structure much less dependent upon the production of goods subject to competing imports than at the turn of the century.

On the other hand, the experience of the South presents a quite different picture. In most industries the South's participation rates in manufacturing employment have shown gains, the most impressive being among nondurable goods industries. These changes have tended to increase the participation rates of these regions in foreign trade. The rise in the export ratios conforms to the changing participation rates of the South in total manufacturing employment. However, the rise in the import ratios between 1929 and 1947 considerably exceeds that in the employment ratios so we may conclude that the Southern regions have acquired an industrial structure in which the production of manufactured goods which face competing imports has assumed increased significance. For reasons to be discussed below, the participation rates of the South as shown in Table 4 probably understate the region's participation in the production of manufactures subject to competing imports.

The estimates presented in this paper, like those of any statistical endeavor, are subject to numerous qualifications. In common with many other studies, the industry groups available for analysis are broad enough so that regional special-

ization in minor industries could alter the results. The 1947-52 comparisons were based on considerable industry detail by current standards but the longer-term shifts are built up from industry groups at lesser levels of disaggregation and are greatly affected by that fact. For example, the participation rate of the West South Central region is but 6.4 per cent of imports in 1947 when calculated on the 20 industry group basis, but 28.6 per cent when based on a 330 industry classification. The difference in this instance arises mainly because of the concentration in the West South Central region of raw cane sugar manufactures, imports of which are very substantial. And it suggests that the long-term participation rates of the South in the production of competing imports are much higher than those shown in Table 4, reinforcing the conclusion that the South's involvement in the production of goods subject to competing imports exceeds its participation rate in employment. A more detailed industrial classification, if available for earlier years, would establish greater confidence in the estimates of the participation rates of regions in the production of manufactures entering trade.

A second qualification, already discussed, is that these measures indicate the locational pattern only of manufacturing industries which produce goods exported or are faced with competing imports and do not disclose the indirect effects. Even aside from the limitations imposed by statistical considerations, the reader is cautioned that these estimates should not be accepted uncritically as indicating the burdens and benefits of foreign trade. Imports, though competitive from the viewpoint of home industries producing a nearly corresponding output, are cost-saving inputs to other industries or individual consumers. Finally, the analysis above should not be interpreted as describing the actual geographic origin of goods which are exported or the regions into which imports flow; rather, these indicate the location of industries which produce outputs similar in industrial classification to those manufactures which are imported into or exported from the United States.

### *Summary*

That producers in a region have an interest in foreign trade which will vary chiefly with the region's participation in the production of goods which enter foreign trade is the basis for an empirical examination of the impact of foreign trade on regions. That the shares of regions differ from their participation in manufacturing activity reflects regional specialization in production and selectivity in the kinds and amounts of goods entering foreign trade.

In general, we find that the Southern regions participate in the production of manufactured goods which enter foreign trade to an extent greater than their participation in total manufacturing activity would lead us to expect; this is especially true of production in industries facing competing imports, and most especially among nondurable goods. The long-term trends, crudely as they are approximated, suggest that the emergence of the South with an employment and output structure oriented toward the production of manufactures subject to competing imports is likely to have been achieved since 1929. Northern regions,

on the other hand, have an industrial structure less dependent upon imports than their current levels of manufacturing employment or value added would suggest. For example, the changing participation of New England in production of manufactures, together with changes in the composition of imports, has tended to make this region's output relatively less competitive with imports. These conditions augur a realignment of sectional interests in respect to the issues in foreign trade policy.

## PUBLIC PREDICTION IN THEORY AND FACT\*

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Of growing importance today are public forecasts of supply, demand and price in agricultural and industrial markets and of aggregate consumption, investment, income and employment. Such publicly divulged estimates present peculiar problems to those making them if only because they may modify the calculations or expectations of the agents whose composite actions are being studied and thereby lead to a result other than that predicted. A serious question, therefore, is whether the public forecaster can adequately take into account the effect of his prediction on public expectations so as to make an accurate one notwithstanding this factor. If the impact on expectations *can* be estimated, on the other hand, the forecaster must necessarily *control*, to some extent, whenever he *predicted*, and many questions about the desirability and objectives of such control are raised.

The paradox in question may be stated conveniently as follows:

Let  $O$  = a set of observed conditions

$L$  = a set of empirical laws describing omnitemporal regularities by which  $O$  is transformed to explain or predict  $O'$ —an observed social event described by a second set of statements

$O^*$  = another set of observed conditions arising from  $O$  after divulgence of the private prediction of  $O'$  from  $O$  by means of  $L$

$L^*$  = a second set of empirical laws arising from  $L$  after divulgence by the same private prediction

$O^{**}$  = a social event observed after divulgence of this same private prediction and logically deducible from  $O^*$  by means of  $L^*$

$t$  = time designation.

It follows that the occurrence of event  $O'$  can be predicted from an initial set of conditions,  $O$ , at time  $t$ , by means of a set of laws,  $L$ . But when this private prediction is divulged,  $O^*$ , and not  $O'$ , will occur. Of course,  $O^*$  could have been predicted from  $O^*$  by means of  $L^*$ . Yet let the forecaster consider the effect of his divulgence of  $O$  and  $L$  and announce this new "correct" prediction of  $O^*$ , and once more the initial conditions and empirical laws change and  $O^{**}$  occurs—not logically deducible from  $O^*$  and  $L^*$ , and so on *ad inf.*

The paradox can also be stated in terms of price, supply and demand. Tomorrow's market price  $p_{t+1}$  can be predicted from knowledge of the demand function ( $D$ ) and a set of supplier price expectations,  $p_e$ , by means of a law ( $L$ ) that market price always depends on the industry demand curve and on supply brought forth, where the amount supplied in turn depends on the supply function and expected price and where expected price depends on existing price.

\*The author is indebted to Professor Albert G. Hart of Columbia University for helpful criticisms at an early stage. Thanks go also to Hofstra College for assistance in preparing several drafts of the manuscript.

But when this predicted price is divulged,  $p_{t+2}$  will occur, not  $p_{t+1}$ , mainly because the initial price expectations change to  $p_e^*$ . Given  $D$  and the new price expectations  $p_e^*$ , however, the forecaster can predict this new market price  $p_{t+2}$  by means of a new law  $L^*$ , namely that price always depends on the industry demand curve and on supply brought forth, where the amount supplied in turn depends on the supply function and expected price and where expected price depends on existing price and on a publicly divulged private prediction,  $P$ . Let this second prediction of  $p_{t+2}$  be divulged, however, and the initial conditions change further, again falsifying the prediction, and so on *ad inf.*

It has been denied that this paradox logically precludes explanation or prediction in the social sciences. Recently Grunberg and Modigliani<sup>1</sup> argued that accurate public prediction was conceivable assuming only the possibility of private prediction. For in private prediction, they hold, the forecaster can predict event  $O'$  from knowledge of conditions  $O$  and laws  $L$ . But once  $L$  is known, we are told,  $L^*$  is also assumed knowable—because they differ only as the result of an empirical law describing how suppliers react to publicly divulged predictions. Once  $L^*$  is known, finally, the forecaster can take account of the impact of his divulgements on expectations and predict  $O''$  from  $O$ . The proof consists of two steps: (1) a demonstration that there exist conditions in which at least one correct public prediction is possible, notwithstanding the reactions of agents; (2) evidence that these conditions are ordinarily fulfilled in the real world. One major conclusion is that public forecasts may help a market reach equilibrium more rapidly because they "remove unwarranted expectations by providing agents with relevant information unknown to them." The correct public prediction is supposed to "coincide with the equilibrium position of the system."

In what ensues we shall explore this contention and then consider certain difficulties in making accurate public forecasts in the real world. It will clarify matters first to consider clearing the market in terms of some ordinary cobwebs. Then we shall turn to macroeconomic prediction.

### I. *Converging and Oscillating Cobwebs*

Converging cobwebs, to say nothing of oscillating ones, demonstrate the power of public forecasts for at least two reasons: their analytical relevance to the model in question; their additional relevance to real world problems. The ensuing discussion will soon indicate the usefulness of cobweb analysis in re-examining the theory of public prediction. As for point two—the empirical aspects of cobwebs—it is well to recall Ezekiel's conclusions some years ago that the many industries experiencing cobweb reactions would act to block full utilization and optimum resource allocation wholly aside from and in addition to the consequences of imperfect competition or imbalances in savings and investment.<sup>2</sup> With this in mind we shall study the impact of public forecasts.

<sup>1</sup> Emile Grunberg and Franco Modigliani, "Predictability of Social Events," *Journal of Political Economy*, Dec. 1954.

<sup>2</sup> Mordecai Ezekiel, "The Cobweb Theorem," *Quarterly Journal of Economics*, Feb. 1938, pp. 255-280.

Figure 1 is the familiar converging series which characterizes many industrial markets. Unlike the diverging case, sometimes referred to in analysis of cumulative expansions and contractions of economic activity, and unlike the oscillating series which are said to occur in certain agricultural markets, a market equilibrium is finally reached. In Figure 1 it is clear that when demand shifts from  $D$  to  $D'$ , convergence ordinarily occurs along path 1, 2, 3, 4, 5, 6, 7, 8, 9, 10 . . . 0, at which point the market is cleared. This happens even where there is no public prediction, or when such a prediction has no effect on supplier expectations.

Let us next introduce a public forecast with a positive weight in the expectation function. The path of convergence will now depend on the Authority's *degree of foresight*—i. e., its degree of knowledge of  $L^*$ , as defined above—something unfortunately mentioned nowhere explicitly by Grunberg and Modigliani. Here we must postulate *how far ahead* the Authority can look in weighing the impact of these divulgences—i.e., the degree to which all empirical laws in  $L^*$  are known. The consequences of this ambiguity are minor but should be mentioned for the sake of accuracy and also because it will help demonstrate further the power of public forecasts.

With "perfect foresight," it can easily be shown that the forecaster could and would anticipate the convergence that would result anyway from the interaction of the  $S$  and  $D$  curves in Figure 1 and, by announcing the equilibrium price ahead of time, would make the  $S$ -schedule less elastic than otherwise. Indeed, this seems to me the case that best indicates the power of public forecasts in clearing mar-

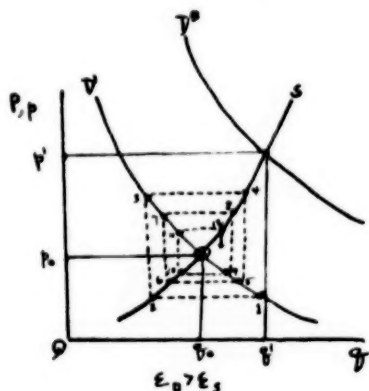


Figure 1

$P$  = publicly predicted price

$p$  = realized price

$q$  = quantity supplied

$p', q'$  = original equilibrium values before demand shifts from  $D$  to  $D'$

$p_0, q_0$  = new equilibrium values, after adjustment to change in demand

1, 2, 3, 4, 5, 6, . . . 0 = the path whereby  $p_0, q_0$ , the new equilibrium, is reached

$t$  = time period designation (used in textual discussion)

kets and the one most in line with the contention that "the correct public prediction is equal to the equilibrium position of the system."

After the fall in demand, at position 1 in Figure 1, where  $p_t = p_1$ , the Authority would know that in absence of a public forecast,  $s_2$  would come forth selling at  $p_3$ . But it would also know that public divulgence of  $p_3$  would lead  $s_4$  to come forth selling at  $p_5$ ; and that divulgence of  $p_5$  would lead  $s_6$  to come forth selling at  $p_7$ , and so on until  $p$  is publicly predicted and  $s_0$  comes forth clearing the market at  $p_0$ .

In other words, if the Authority 1) knows the initial values of the  $S$  and  $D$ -curves; 2) can weigh the impact of its divulgences in making public predictions; 3) knows agents have complete faith in  $P$ ; 4) has perfect foresight; the Authority would also know that  $P_{t+1} = p_3 \neq p_{t+1} = p_5$ ;  $P_{t+2} = p_5 \neq p_{t+2} = p_7$ ; ...  $P_{t+n} = p_0 \neq p_{t+n} = p_0$ . With perfect foresight, then, the Authority could take into account the effects on supplier expectations of all possible values of  $P$  and do so simultaneously. It would follow that one and only one value of  $P$  would be "correct"— $p_0$ —the equilibrium price, and this is the only value that would be forecast.

It may be objected at this point that  $P$  does not necessarily coincide with the short or long-run equilibrium price and this is true. But it is equally true that only where we explicitly postulate "imperfect foresight" for the Authority (i. e., deficient knowledge of  $L^*$ ) can a value of  $P$  not equal to equilibrium price be "correct." This follows from the case of "perfect foresight" just examined. Suppose, for instance, that the Authority can only predict the *next step* in a cobweb or, more precisely, can consider only the impact of its divulgence of that step. Then in Figure 1, when  $p_t = p_1$ , the Authority would know that a divulgence of the fact that suppliers would now bring forth  $s_2$  which would sell at  $p_3$ —that such a divulgence, fully believed, would mean  $s_4$  would come forth, selling at  $p_5$ . Would the Authority therefore divulge a prediction of  $p_5$ , (rather than anticipate the impact of *that* divulgence too on supply and price) such that when  $p_t = p_1$ ,  $P_{t+1} = p_5$ ? The answer is "yes" if we postulate "limited foresight" in the manner just done. As a matter of fact, this assumption of "limited foresight" does seem more realistic, although "perfect foresight" gives a nicer logical model. One interesting assumption to work with might be that the Authority has deficient knowledge of  $L^*$  but that this knowledge *improves with time*. In other words, we could postulate both "limited foresight" and "learning" (by the Authority). In this case, when existing price is  $p_1$ ,  $p_5$  will be forecast publicly, with  $p_7$  actually resulting. Then, when  $p_7$  prevails, the Authority would not forecast  $p_{11}$  but something *closer to equilibrium price than*  $p_{11}$  (say  $p_{12}$ ), depending on the degree of "learning."

Before interpreting these findings further it may help to restate the assumptions underlying standard cobweb analysis; namely that (1) production is completely determined by the producers' response to price, with future production plans made on the assumption that present prices continue and that individual production plans will not affect the market; (2) once plans are made, at least one full period is needed before production can be changed; (3) price is set by

available supply. In other words, in Figure 1 when prevailing price is  $p_2$ , the supply brought forth ( $s_2$ ) ordinarily depends on a previous price,  $p_1$ , and the resulting price will be  $p_3$ , which is falsified in its own turn since  $s_2$ , (based on  $p_2$ ) and not  $s_3$ , is brought forth, and so on until convergence.

Bearing this in mind, public forecasts take on new light. To be sure, they cannot alter condition #2 above—the technical factors impeding and delaying the adjustment of supply. But public forecasts *can* change condition #1—the degree of foresight of suppliers. Thus if suppliers *could* foresee the net result of their trials and errors, and if they could predict equilibrium price  $p_0$ , they would bring forth  $s_0$  which would clear the market at that price. Public divulgence of the equilibrium price, fully believed, would provide this needed information and so hasten the convergence process. Stated otherwise, public forecasts would enable suppliers to act on "warranted expectations" even though they were competitively organized.<sup>3</sup>

In another sense, one might also say that without a public forecast suppliers in Figure 1 fail to learn adequately from the gluts and shortages to be able to cope with condition #2 (the production lag), and that if they did learn more quickly, and could act collectively on their knowledge (which is not possible under pure competition), they would reach equilibrium more quickly. On the other hand, it can be argued in turn that the rate of convergence depends only in small measure on any "capacity to learn," really depending for the most on the elasticity of *demand*, which is unaffected by  $P$  and on technical, production period factors affecting the elasticity of supply, also unaffected by  $P$ . It would therefore follow that rapid convergence might coincide with a *zero* capacity to learn, and slow convergence (or actual divergence) coincide with a *positive* capacity to learn. Nonetheless, we also have the possibility that the agents' capacity to learn may impede or accelerate a convergence whose *basic limits* are set by conditions #2 and #3 (p. 6), and that a public forecast helps them learn more quickly thereby making the market more "perfect" once again.

Let us now conclude by briefly examining Figure 2—an oscillating cobweb<sup>4</sup>—often illustrated by the corn-hog cycle where suppliers either fail to learn from past mistakes in production decisions, or have no mechanism to act on the knowledge they may gain from experience, and where technical obstacles pure and simple block adjustments towards equilibrium. In this case, even a forecaster's knowledge of the *whole*  $S$  and  $D$  curves would not legitimately allow a private forecast of  $p_0$ , but only of the fact of oscillation itself. On the other hand, a public forecast of  $p_0$  is legitimate, once again, assuming that (1) the forecaster knows that agents have complete faith in  $P$ ; (2) the agents maintain this confidence for the period it requires them to adjust production; (3)

<sup>3</sup> Or even more clearly—"pure" competition in Chamberlinian terms becomes more "perfect," the greater perfection resulting from improved knowledge of the future course of price and output and the reduction of uncertainties with regard to them. (See E. H. Chamberlin, *Theory of Monopolistic Competition*. Cambridge: Harvard University Press, 1940, pp. 6, 7, 26.)

<sup>4</sup> A similar argument applies to divergent cobwebs too.

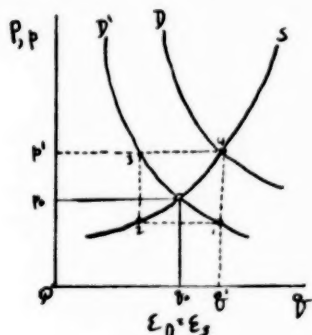


Figure 2

$P$  = publicly predicted price

$p$  = realized price

$q$  = quantity supplied

$p', q'$  = original equilibrium values before demand shifts from  $D$  to  $D'$

1, 2, 3, 4 = the oscillating path which follows the shift in demand from  $D$  to  $D'$

$p_0, q_0$  = new equilibrium values reached through successive public predictions of  $p_0$

the Authority has "perfect foresight" and can consider the effect of all possible values of  $P$ ; (4) the Authority keeps predicting  $p_0$  until it is realized in the market. In Figure 2 the repeated prediction of  $p_0$  would gradually lessen the elasticity of the  $S$ -curve, shifting the whole schedule, and  $s_0$  would eventually come forth clearing the market at  $p_0$ .<sup>5</sup>

So far we have assumed perfect public confidence in  $P$ . It can also be shown that similar results will occur even where confidence is not perfect, provided only that the degree of belief in  $P$  is known and is greater than zero.

## II. Changing Degrees of Public Confidence and Ranges of Indeterminacy

We shall next examine the implications of *changing* degrees of public confidence in  $P$ —something neither model builders nor real world forecasters can well ignore. Two points will be made. The first is logical: Knowledge of all empirical laws in  $L$ , required for private prediction, does not necessarily imply knowledge of the additional empirical law transforming  $L$  to  $L^*$ . We have just seen that the Authority's complete knowledge of  $L^*$  entails full knowledge of how agents will react to divulgements of *all* possible values of  $P$ —"perfect foresight"—which we will now show in turn requires full theoretical knowledge of attitude formation and of the determinants of public confidence in  $P$ . Such

<sup>5</sup> The point is made somewhat differently in *Theory of Monopolistic Competition*, Figure 4, p. 28, and the ensuing discussion. There it seems that oscillating cobwebs arise because buyers and sellers seek to gain by accentuating price movements—selling only when they exceed equilibrium price and buying only when they fall short. Chamberlin concludes: "Of course, if everyone knew what the equilibrium price was, there would be no deviations from it whatever... More perfect knowledge will stabilize prices, but not more speculators" (p. 29). (Italics supplied.) In other words, public forecasts, by providing more knowledge, would even seem to bring oscillating cobwebs to equilibrium.

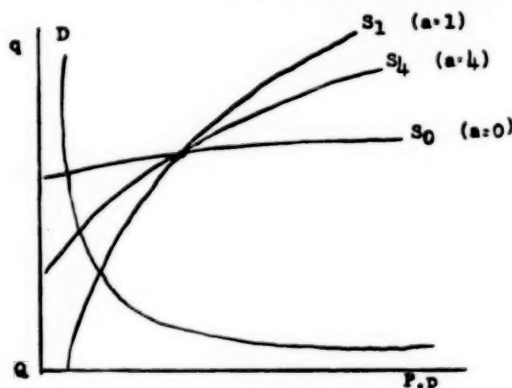


Figure 3

$P$  = publicly predicted price

$p$  = realized price

$a$  = weight signifying degree of confidence in  $P$

$q$  = quantity supplied

$S_1, S_4, S_0$  = supply functions with varying assumptions about degree of confidence in  $P$

knowledge is by no means identical with knowledge of laws in  $L$  where the agents' reactions to  $P$  do not enter. It therefore follows that knowledge of the law transforming  $L$  to  $L^*$  must be stated explicitly as a separate assumption, one in addition to the feasibility of correct private prediction, if public prediction is to be logically possible.

But resolution of the *logical* difficulty would still leave a serious empirical problem, one to which the former really directs our attention and which we will now examine. Private predictions in the real world are made in terms of probability estimates. *Public* predictions would therefore be subject to two sorts of errors: those that arise from inaccuracies of the Authority's *private* forecasts and those that arise from estimating the transformation of  $L$  to  $L^*$ . These latter errors, it is true, are not due to differences between transitional and final equilibrium prices—both of which could be predicted accurately from full knowledge of  $L^*$ . But the question still remains as to how such mistaken  $P$ s will affect economic behavior.

Figure 3 will help us consider this point; but first a word about its construction. Essentially we have adopted the Grunberg-Modigliani diagram with a few additions to make our point clear.<sup>6</sup> The  $S_1$ -curve is drawn on the assumption that the quantity brought forth tomorrow depends on supply conditions today like costs, numbers of firms, and on expected price which in turn depends on existing price and on publicly predicted price. The notation  $a = 1$  indicates that the  $S_1$ -curve is drawn on the assumption that the degree of confidence in  $P$  is perfect. Values of  $P$  are measured on the horizontal axis. The quantities they induce suppliers to bring forth can be read from the  $S_1$ -curve

<sup>6</sup> See E. Grunberg and F. Modigliani, *op. cit.*, pp. 469-470.

itself. The price these quantities actually sell for is measured on the vertical axis. There is only one value of  $P$  such that publicly predicted price will equal realized price.

Finally, the  $S_0$  and  $S_4$  curves are drawn on the assumptions that prices are expected to remain constant in absence of a public prediction but that after such prediction, expected price will be a weighted average of price today and of  $P$ , with the weight  $a$  varying according to the degree of belief. Once again there is only one value of  $P$ —whatever the degree of confidence in  $P$ —that will bring forth an amount from suppliers that will clear the market at a price equal to  $P$ .

Returning to our argument, we might say that if the mistaken  $P$ s that results from incorrect estimates of  $L^*$  actually lessen the degree of confidence in  $P$ , the relevant supply function would shift (say) from  $S_1$  to  $S_0$  and down towards  $S_0$ . Where confidence is built, on the other hand, it would shift up towards  $S_1$ . In Figure 3 the position of this function is allowed to vary with changing public confidence in  $P$  and we have a general case where a unique solution is possible only if the function's *changing position* (as well as its *shape*) can be predicted. Stated otherwise, knowledge of the empirical laws transforming  $L$  to  $L^*$  (and of the laws in  $L^*$ ) entails knowledge of learning theory and quantitative data that we must seek out from related disciplines.

In this regard, learning theory<sup>7</sup> tells us that by deliberately informing suppliers of what is happening in the market and of why and how believing  $P$  will help clear it more rapidly, public forecasts might lead to greater confidence and to a converging series. But we also know that first-hand participation is better than verbal-intellectual explanation in changing attitudes or confidence, and one wonders whether suppliers can get such first-hand experience with the whole adjustment process in which they are involved. Moreover, suppliers do not have homogeneous capacities to learn; some are probably likely to follow the forecasts, others are not. Some will probably seek prestige and maintenance of self-esteem by playing the game; others may not. Most important, perhaps—suspicion of the Authority raises real problems: public explanations, even when valid, may not be accepted where the source is not trusted. Then further mistakes would be blamed on the Authority, with greater loss of confidence and less willingness to accept additional explanations, etc. In other words, learning theory may eventually provide a precise answer as to *how*, if at all, the supply function in Figure 3 will shift after mistaken public forecasts; but in the absence of such knowledge—or in the face of our present failure to formalize its implications for economics adequately—there seems no justification *a priori* to assume the supply function remains fixed.

As a supplementary approach, on the other hand, *quantitative* studies may help us ascertain the degree of public confidence in  $P$ . Surely great strides are being made here and the survey techniques used to estimate consumer-business expectations, public opinion on social-political issues, etc., utilize a common

<sup>7</sup> For a good introduction and orientation see Kurt Lewin, *Field Theory and Social Science* (New York: Harper and Brothers, 1951), especially chapter IV; E. C. Tolman, *Purposive Behavior in Animals and Men* (Berkeley: University of California Press, 1951), especially chapters 21–24.

methodology that may some day produce a reliable index of public confidence.<sup>8</sup> Indeed, both the methodology and the results of such surveys are gaining increased recognition amongst many economists. At the least they already help us avoid the pitfalls of trying to designate and isolate *all* ultimate determinants of attitudes—knowledge of which would really obviate the need for the surveys themselves. In this sense they may also enable us to estimate public confidence in  $P$  sooner than would be the case if we relied wholly on theories of learning and attitude formation.

Nonetheless, in view of well-known limitations both in our theoretical knowledge of attitude *formation* and in empirical techniques for measuring *existing* attitudes, there seems to be no reason to assume that mistaken  $P$ s in Figure 3 must build confidence. They may lessen it, or leave it the same. In the present state of knowledge it is probably safest to say, for reasons examined in section III below, that confidence in  $P$  will vary from zero to one (not from one to minus one) and that market price will therefore probably be indeterminate within a range set by the intersection, with the demand schedule, of supply functions  $S_1$  and  $S_0$  in Figure 3.<sup>9</sup>

My contention is simply that the economic model reviewed provides no adequate mechanism for accurate public prediction unless additional psychological, social or legal assumptions are introduced concerning the transformation of  $L$  to  $L^*$  and the empirical laws in  $L^*$ . A determinate solution would at least require a postulate that the public authority can not only ascertain the suppliers' expectations, but also ascertain whether these expectations will change (and if so, how) after public forecasts of price-output probability distributions narrower or wider in range (or of different skewness) than those of the supplier. This further requires knowledge of social-cultural factors like the level of economic education and sophistication in the community, degree of respect for and confidence in bureaucracy, mechanisms for rewarding those who follow the Authority and penalizing those who don't, etc. The likelihood that any "mistaken" public forecast will build or reduce public confidence will depend on these and related factors.

### III. On Narrowing the Range of Indeterminacy

Having said this much about serious obstacles to a determinate solution, we may now study some of the additional assumptions mentioned. To analyze

<sup>8</sup> The most systematic study of survey methods from both the logical and technical side is a heroic endeavor by Herbert Hyman, *Survey Design and Analysis* (Glencoe: Free Press, 1955). Applications to economics include: Lawrence R. Klein and George Katona (eds.), *Contributions of Survey Methods to Economics* (New York: Columbia University Press, 1954); G. Katona, *Psychological Analysis of Economic Behavior* (New York: McGraw Hill Book Company, 1951); L. H. Clark (ed.), *Consumer Behavior* (New York: New York University, 1955); Millard Hastay, "The Dun and Bradstreet Surveys of Businessmen's Expectations," *Proceedings of American Statistical Association*, Sept. 10, 1954 pp. 93-123.

<sup>9</sup> On the usefulness of such ranges of indeterminacy in economic analysis, see William Fellner, *Competition Among the Few* (New York: Alfred A. Knopf, 1949); also M. Shubik, "Information, Risk, Ignorance and Indeterminacy," *Quarterly Journal of Economics*, Nov. 1954, pp. 629-640.

the impact of mistaken public forecasts on confidence, we must first consider whether (1) a Public Authority is likely to predict a price closer to realized price than that forecast by a good portion of all suppliers (i.e., whether its *private* forecast is likely to be closer to  $p_{t+1}$  than is the suppliers' expected price); (2) faith in mistaken public forecasts will be maintained if only they are known to be less faulty than the mistaken private predictions of suppliers.<sup>10</sup> For these are the conditions that must be fulfilled if confidence in public forecasts is to be maintained notwithstanding errors that are inevitable in fact.

The likelihood of fulfilling condition #1—concerning the public forecaster's ability to make better private estimates than suppliers—really depends upon two well-known characteristics of private prediction not yet mentioned. On one hand, suppliers in a free market system see only a small part of the whole picture, and still, notwithstanding this limited view, there is evidence that farmers, for one, can actually predict the *range* within which realized price later falls.<sup>11</sup> One would expect a public Authority, with its overall view, its wider array of relevant market data and greater economic sophistication, to be in a strong position to do even better, although its divulgements may complicate matters along lines already considered. To be sure, this all depends on the research facilities and expert knowledge available to public authorities. But barring any sharp reduction in the rate of research expenditures or in access to market data of a confidential sort, the public authority's advantages over individual suppliers, in making accurate private forecasts, should continue to grow.

An Authority may also benefit from the additional fact, noted earlier, that at any point in time individual suppliers hold different price estimates from each other, with different degrees of subjective certainty. The Authority's chance of making better guesses than at least a portion of the suppliers is greater where the latter themselves vary in their expectations and this is important even though no single supplier makes estimates totally outside the actual range within which realized price later falls. In short, all that is needed is that the Authority's estimates of the family of prices which occur during the process of market adjustment are of a range narrower than that estimated privately by suppliers. The Authority has only to make a *better* estimate, not a perfect prediction, in order to increase the degree of public confidence.

As for condition #2—concerning the likelihood that public confidence will be maintained or improved if only mistakes in  $P$  are known to be smaller or fewer than mistakes in the suppliers' private forecasts—the question is whether publicly divulged mistakes may not be *exaggerated* by suppliers and their own private mistakes *minimized* (the scapegoat effect). If such were the case it would admittedly be hard to say *how much better* a job the Authority must do before public confidence remains constant, let alone improves. As a matter of

<sup>10</sup> A subsidiary point, beyond our scope in this article, is whether, cognizant of the negative reaction to its divulgence, an Authority would actually be forced to deceive or manipulate agents in order to make accurate forecasts.

<sup>11</sup> See Earl O. Heady and Donald R. Kaldor, "Expectations and Errors in Forecasting Agricultural Prices," *Journal of Political Economy*, Feb. 1954, p. 43.

fact, this is a serious problem in view of considerable evidence that when agents doubt the trustworthiness of a source of information, they are likely to discount its accuracy whatever its objective merits. It is surely possible that such mistrust would operate to lessen belief in public forecasts even where they are in fact better than the suppliers' private ones, though it also seems likely that where  $P$  is repeatedly more accurate than private predictions, this mistrust would eventually be overcome.

Now we may proceed to three fundamental questions. First, will mistaken  $P$ s reduce public confidence such that this confidence becomes a negative weight in the expectation function? It seems highly improbable that this would *always* or even *usually* be true. But it surely *might* happen where antagonisms between supplier and forecaster intensify for social-political reasons. For example, judging from past experience such mistrust might well occur if the public forecaster of macroeconomic variables failed to foresee another economic catastrophe like the crash of 1929 or a hyper-inflation; it could also develop, at least conceivably, with serious mistakes not quite that extreme. In such a situation, of course, should  $P$  be closer to  $p_{t+1}$  than is  $p_e$ ,  $p_e$  would be closer to  $p_{t+1}$  than is  $p_e^*$ . (See p. 2.) In other words, barring the possibility that accuracy of  $P$  might be lessened by inadequate research facilities and the resulting unfulfillment of condition #1 (p. 13), extreme mistrust could have perverse effects in its own right. In general, however, the effective range within which confidence would vary, seems to be between 0 and 1, for reasons examined shortly.

Second, granted that mistaken  $P$ s will most probably keep confidence from being perfect, will they necessarily keep it from *rising towards one*? This depends on how accurate public and private forecasts are in fact and the seriousness of the "scapegoat" factor mentioned earlier. It is quite probable logically, and more than apparent empirically, that public confidence in  $P$  will exceed zero though it falls short of one.

Third, are there reasons to expect *recurrent* changes in public confidence? In this regard we know that such confidence is modified over long periods not so much by the fact of  $P$ 's greater accuracy, but due to changes in attitudes towards bureaucracy, intellectuals, etc. Nonetheless aside from these gradual, long-run factors, one plausible hypothesis is that suppliers who hold  $P$  in low esteem are more easily impressed than others by public forecasts *even a little better* than their own predictions, that such "superior"  $P$ s are in fact very likely to occur, and therefore that whenever confidence approaches zero *the stage is set for an improvement*. Likewise it seems that suppliers with high confidence in  $P$  might well be more readily disappointed if the forecasts were not *considerably more accurate* than their own, that it would in fact become more and more difficult to satisfy their increasingly high expectations concerning accuracy, such that as confidence approaches one *the stage is set for a loss of confidence*.

This hypothesis seems to gibe roughly with certain well-known theories about psychological factors in the business cycle. In explaining the upswing, for example, Pigou, Lavington and others, make much of a "period of gestation" during which production is planned and executed, new capital equipment built

and put into operation, but before output reaches the market. During this period, suppliers continue to plan and act optimistically on unwarranted expectations that will be falsified when all the planned output finally enters the market. If they knew this beforehand they might revise their expectations downward and try to reduce their investment commitments. The same is true for the downswing.

The need to introduce all suppliers to correct data of what is actually happening in hopes of leading them to revise their mistaken judgments early in the cycle, is suggestive of possible uses for public forecasts. Indeed notwithstanding sharp criticisms to the contrary,<sup>12</sup> it is clear that public forecasts will modify both unwarranted expectations and also the *behavior* they produce if we assume that:

(1) one public forecast (*P*) dominates in authority notwithstanding the existence of alternative predictions;

(2) the degree of confidence in *P* exceeds zero;

(3) *P* deals not only with national aggregates but also with specific industry output-sales-cost data;

(4) firms in any industry are not those of the "pure competition model" but are "workably competitive" with variations in all or some of the following: size of their assets, output and employment; their cost levels and structures; their degree of actual entrenchment and their need or desire for further entrenchment in the market; their time horizon; the personal outlook of management and ownership, etc.;

(5) a firm's willingness to discount objective uncertainties does not vary inversely with the strength of its market position as detailed in condition #4, or, more extremely, that objective and subjective uncertainties coincide.

For it would then follow that should *P* predict that 60 per cent of the firms planning (say) to expand output by a certain proportion will suffer losses, and should suppliers have been holding overly optimistic expectations theretofore, some ascertainable alteration of production plans will follow depending in specific cases on factors listed under item #4 above and on individual estimates held before *P* of the chances for individual success.<sup>13</sup> In other words, under the stated conditions the theory of public prediction does seem to have relevance to real world forecasting and stabilization policy.<sup>14</sup>

<sup>12</sup> See J. M. Clark, *Strategic Factors in Business Cycles* (New York: Augustus M. Kelley, 1949), pp. 163-4.

<sup>13</sup> Presumably these estimates had been based on an "unwarranted" assumption that less than 60 percent of expanding firms in the industry would fail—how many fewer, and the relative likelihood of them failing, reflected in the range, skewness and higher moments of the firm's probability distribution of expected failures. After *P* is announced, the firm's estimates of its *own* chances to succeed would change—depending on its market position (as itemized above, p. 17, in condition #4). Behavior would then be altered in line with these new expectations of individual success if we grant that subjective and objective uncertainty coincide, or at least that the firm's reaction to known uncertainties does not vary inversely with the strength of its market position.

<sup>14</sup> Purely competitive firms of economic theory, on the other hand, by definition cannot change supply and/or price and would on that score be unable to change their decisions even after public data showed their expectations to be unwarranted. The consequences of public forecasts in this highly restricted case were examined briefly in section I above.

Nevertheless, the very fact that confidence in  $P$  may be lowest and highest when times are bad, implies that the power of public forecasts to lead suppliers to act on warranted expectations may be least when needed most. For when private expectations are falsified and a downturn ensues,  $P$  may be more readily accepted so far as it includes both analyses of what will happen should no deliberate private or public policies be made to alter economic activity and advice of what must be done to make the preliminary forecast become untrue. Likewise, after a depression continues for a time, suppliers may begin to be disappointed by expecting too much from  $P$  and the stage is set for a gradual loss of confidence (in  $P$ ). Indeed their excessively high hopes for accurate  $P$ s, the difficulty of satisfying which eventually reduces faith in  $P$ , probably reflects in part the suppliers' own decreasing self-confidence as the downswing progresses.

So much for a thesis about possible fluctuations in public confidence in  $P$ . This still leaves the kind of mistrust, noted above, that may develop after some colossal blunder, or the supremely high degree of confidence in  $P$  resulting from a spectacular success in public forecasting. In the first instance, confidence would tend to gravitate towards zero and remain there no matter what; indeed it might even move towards minus one. In the second case the opposite would be true. Granting the *conceivability* of such extreme instances (especially the colossal blunders), they do seem to be very special examples and not at all representative of what will usually happen.

In short, ruling out those gradual, long-run changes in attitudes, arising from institutional-sociological factors and excluding blunders or successes of an extreme sort, there is some reason to believe that confidence in  $P$  will show at least a weak tendency to oscillate between zero and one.

#### IV. Implications for Real World Predictions

This analysis of the possible impact on public confidence in  $P$  of mistaken public forecasts suggests several additional requirements for accurate public predictions in the real world.

First, in order to estimate how much better or worse its *private* forecasts will be than those of individual suppliers, an Authority must weigh carefully all research resources, material data and theoretical knowledge available both to the suppliers and to itself.

Second, to improve its estimate of how suppliers will respond to mistaken public forecasts, an Authority can best start by ascertaining their degree of confidence in  $P$  at the outset. Given this knowledge of the existing degree of confidence and of the actual or expected difference in accuracy of the *private* forecasts of suppliers and itself, the Authority could better estimate the *direction* in which public confidence will change after  $P$  is divulged. This would modify the price actually predicted publicly.

Third, in view of inadequate empirical and theoretic data, the Authority could probably best utilize its estimates of the direction in which public confidence in  $P$  changes, if these changes are *very small*. Anything that stabilizes

confidence would increase predictive accuracy, than, provided that the Authority had knowledge of it.

In connection with this last point let us hasten to remember that the Authority's public divulgements necessarily affect supplier expectations and behavior—no matter what the Authority desires. By simply ignoring its influence, or the effect of the form in which it sets its predictions, the Authority can by no means eliminate this influence, the only exception being the case of zero confidence. And if this is so, then by being self-conscious about the precise way it influences expectations and confidence, may the Authority not also improve the *accuracy of its predictions as it influences*? For instance, could not a form for the prediction statement be devised for purposes of stabilizing or improving confidence, the more effectively to incorporate estimates of the *direction* of its changes into public forecasts? Wholly aside from the moral and political implications of the deliberate stating of forecasts so as to lessen or increase confidence in hopes of counteracting unwarranted exuberance or despondency, it is abundantly clear that public predictions *would* be more accurate where the direction and rate of change of confidence are estimated more precisely.

At any rate, the form of prediction statement most likely to stabilize confidence *without* additional coercion, deception and control, has actually been stated frequently in the well-known distinction between unconditional and conditional forecasts—those that predict some event will occur "no matter what", and those forecasting an event *if* certain conditions hold or *if* everyone continues to act in a certain way.<sup>15</sup> Should the predicted event *not* occur, of course, it may be that the forecast was inaccurate for technical reasons; but it may also be that agents have heeded the prediction and that their changed behavior "falsified" the forecast. If properly informed of this, both those who did and who did not change their behavior might be less likely to blame the Authority for more than its "rightful share" of the error (i.e., its technical deficiency) than in the case of unconditional forecasts. Public confidence would still fall but the fall would not be due to a *misunderstanding*. Furthermore, if the Authority's greater access to data, expert knowledge and research facilities in fact improve its *private* predictive accuracy, which seems likely, a properly qualified conditional statement for its *divulged* predictions would help assure that suppliers give credit where credit is due. In this case, of course, confidence in P would tend to improve as suppliers "learn" about the Authority's capabilities and accuracy.

To conclude, then, public predictions should contain both a frank and objective "preliminary forecast" of what will happen *in absence of deliberate public or private policies to change economic behavior*, and a "conditional projection" or policy prescription that aims at falsifying the preliminary forecast.<sup>16</sup> This surely requires political courage; but it really introduces no elements

<sup>15</sup> E. Grunberg and F. Modigliani, *op. cit.*, footnote 11, p. 467.

<sup>16</sup> See Robert C. Turner, "Problems of Forecasting for Economic Stabilization," *American Economic Review*, May 1955, pp. 333-334 for an illuminating statement on these matters.

of coercion and control not already implicit in any public prediction. The objective is to give suppliers a more accurate understanding of the economic changes actually occurring, the better to enable them to appraise the wisdom of their own actions and to act on "warranted expectations." From a strictly scientific viewpoint, the result would simply be to help eliminate an avoidable set of errors that needlessly destabilizes confidence in public predictions—the erroneous private views of why public forecasts are falsified—by replacing or supplementing these incorrect private explanations of public mistakes with better public explanations.

#### V. Conclusion

We have tried to clarify the power and limitations of a recent theory of public prediction and also to indicate some implications for real world forecasting.

First, we demonstrated how public forecasts might theoretically help markets reach equilibrium more rapidly than otherwise, assuming that a public Authority had (a) perfect foresight (b) limited foresight (c) limited but increasing foresight as to the effect of its divulgences on the agents' expectations and behavior. In each case suppliers were assumed to have perfect confidence in  $P$ ; but relaxation of this condition would not seriously alter the results.

Second, we argued that, logically, knowledge of  $L$  did not necessarily imply knowledge of  $L^*$  and that the latter must be postulated explicitly if public prediction is to be logically possible.

Third, a closely related empirical question was examined: how will public confidence in  $P$  change due to mistaken  $P$ s that result from mistaken estimates of empirical laws in  $L^*$ —a set of errors in addition to those arising from the probability nature of private real world forecasts? Without answering this question directly we held that the problem was: (a) potentially answerable both in theory and fact; (b) presently unanswerable by the economist either in theory or fact, but that many requirements for a satisfactory answer could at least be formulated; (c) best handled at present by estimating the range within which public confidence in  $P$  would actually fall. Several factors affecting this range and operating within it were then examined by analyzing the probability that mistaken  $P$ s would build confidence from zero to one, reduce confidence from one to zero, or from zero to minus one. The effective range within which confidence tended to move was seen to be zero and one.

Lastly, tentative conclusions were drawn, spelling out briefly the major implications of this analysis for public prediction in the real world.

## THE ROLE OF ECONOMICS IN EDUCATION FOR BUSINESS ADMINISTRATION

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This article owes its inspiration and is a sequel to one by Professor Clarence E. Philbrook in the April 1957 issue of *The Southern Economic Journal* entitled "The Disciplines of Economics and Business." Although it is intended in part as a critique of the Philbrook article, its major purpose is to explore further the complex network of relationships between the disciplines of economics and business administration. Whereas Professor Philbrook was primarily interested in drawing the proper lines of distinction and demarcation between the two disciplines in order that their separate subject-matters might be more rigorously and fruitfully developed, the purpose here will be to explore areas of interdependence between the disciplines, as well as the needs and benefits of cross-fertilization, during the educational process, among student groups selecting one or the other discipline as a major field of study.

In his penetrating and well-argued analysis Professor Philbrook sets out to explore and dispel the "sources of a false impression of ambiguity . . . inherent in the logical relationship between the discipline of economics and the discipline of business." In so doing he develops the major thesis that . . . "a strong demarcation of fields is to be recommended." With this thesis we are in general accord since different academic objectives are usually pursued and different analytical and theoretical concepts are frequently employed to extend the scope of knowledge in the two fields. To draw a clear line of demarcation between the disciplines for the purpose of academic research and instruction does not imply, of course, that particular groups of students would not be benefited by collateral study in the two fields.

According to Professor Philbrook, economics is a study of systems rather than a study of the particulars of private economizing actions. "The economist does not take the viewpoint of any one private interest—be it that of the consumer as such, of laborers, of capitalists, or of businessmen"—but studies the "economizing of society—economizing by wise selection of institutions." Again in our view Professor Philbrook's dichotomy is essentially a correct one, although we would hasten to add that much probably depends on how particular are the "particulars" and the point of view from which the private economizing actions are studied.

### I

In his article Professor Philbrook appears to be concerned primarily with the relationship between economic theory—price and distribution, money, and employment—and business administration. Within the field of economics he draws a distinction in subject matter primarily between theory on the one hand

and the study of the interest aspects of individuals, consumers, business, and labor on the other hand. By thus concentrating attention on the relationship between economic theory and business administration Professor Philbrook apparently overlooks, in our judgment, the areas in economics which exist in the state of greatest ambiguity *vis a vis* business administration.

Although the "core of 'economics' in its traditional meaning" has been held to refer to price and distribution, money, and employment, such equation of economics with economic theory appears to be a rapidly vanishing tradition. Economic history, for example, has long been recognized as an independent area. Economic development is a burgeoning subdiscipline specifically designed to overcome the patent shortcomings of price and income theory in long-run analysis. Institutional economics, either in the holistic sense as used by Veblen, Commons, and Ayres, or in the more simple operational and descriptive sense by which conventional theory is tested and modified, has gained recognized stature. And such subdisciplines as labor, public utilities, public finance, business cycles and forecasting, managerial economics, money and banking, government and business, transportation, consumer economics, marketing, and international trade—in which theory, history and institutional approaches are combined in the study of given economic classes, sectors, or industries—are attended probably by as many specialists in social economizing today as is the citadel of theory. Lines of demarcation have been drawn around these subdivisions in order to channel interests and deepen the degree of penetration. Competency in these fields as well as in theory is essential to the proper shaping of the institutional structure—which, according to Professor Philbrook, is the object of economics.

It has been our experience that in the larger colleges and universities in the South, economic theory and business administration are likely to be free of interpenetration. This goes also, generally, for economic history, economic development and institutional economics in the holistic sense. But in subjects devoted to the study of given economic classes, sectors, and industries, as illustrated in the preceding paragraph, interpenetration between economics and business administration is prevalent. Needless to say, these are precisely the subject-matter areas most intimately associated with policy making and the selection of the proper institutional setting. It is in these areas that policy may become the handmaiden of special or professional interests—a result which Professor Philbrook is anxious to avoid.

## II

Before undertaking to defend the thesis that extensive cross-fertilization between the disciplines of economics and business administration is both needed and mutually beneficial, two minor but important hypotheses of Professor Philbrook deserve critical examination.

The first of these hypotheses holds it is impossible to expect the businessman to make decisions in the light of social interests except in a perfect dictatorship or in a community where perfect consensus on the ethics of every possible action

prevails. Furthermore, according to the hypothesis, "there are spheres in which action taken in self interest will in general contribute better to the social interest than will individual actions required to be determined by individuals' notions of the social interest."

It is indeed likely that the businessman in a private enterprise economy will make decisions predominantly in the light of private or special interests, but this fact does not preclude the possibility that private interests may be interpreted and conditioned by the impact of private action on the public interest. Somewhere along the chain of cause and effect private and public action must interact in harmony or discord. Any damaging repercussions of discord upon the private interest in the form of unwanted social controls, adverse public reaction, or counter-demands in collective bargaining may in the long-run force recognition of an overriding public interest.<sup>1</sup> In such cases the businessman, whether he realizes it or not, has made his decision in light of public as well as private interest. Private and social interests are thus integrated in a given sphere of action. This is not always the case, but it is a good possibility in an economy where the scope of private action has broadened so rapidly that an awareness of the public interest is forcefully impressed upon the businessman.

To say that the businessman can give no weight to the social interest in his decisions implies also that the businessman is an amoral, completely materialistic private center of power and decision. Reason and morality are hence discarded as "tamers of business power." Society is forced to accept exclusively the Machiavellian precept of external control as the only feasible alternative by which the public interest can be enforced. Regulation might ideally take the form of the built-in, spontaneous controls of competition. But in an institutional environment in which the competitive rules of the game are ever more difficult to enforce as a result of fundamental changes in the structure of the economy, recourse must be had to direct controls to maintain a balance of power between major economic pressure groups.

<sup>1</sup> The following quotation from an article by Professor Harold L. Johnson, "An Evaluation of the Social Responsibility of the Businessman Concept," *The Atlanta Economic Review*, April 1957, Vol. VII, p. 4, is apropos: "The rationale of competitive free enterprise suggests that the major item in the agenda of the businessman role is that of pursuing profits as rigorously as possible within the framework of private enterprise and of common honesty and decency. There is plenty of evidence available, however, to indicate that the agenda of contemporary businessmen has undergone considerable change from this rather simple schedule of duties, if this brief agenda ever did exist in reality. The change has been precisely one in which a social responsibility concept of behavior has been added to the agenda and responses of businessmen. Antitrust enactments, taxation legislation, labor unions, community development goals, social security, industrial accident and unemployment protections, changing views of business morality, trade association activity, and professionalization of management discussions are just a few of the developments of the past century which have exerted influence on the agenda facing business executives today. Because the changes have been largely piecemeal in character, we perhaps have not been mindful of the process of adjustment taking place, but, if we examine with perspective the period from 1860, a changing agenda for business leaders seems evident."

In our view social reason and morality should not be discarded as "tamers of business power." They are to be sure only one of several means by which business power can be canalized toward socially desirable ends. But to the extent that they may influence business decisions, the spreading web of direct controls may be halted without sacrifice of the social interest.

### III

A second minor hypothesis of Professor Philbrook which demands careful scrutiny, and considerable qualification, is his view of the limited usefulness of economic analysis to the businessman. According to Professor Philbrook, . . . "Economics as such after all does not rank high in the scale of relative importance (of the business manager)—presumably not because it aims at nothing useful to the manager, but because those aspects of economic interaction which are important to him are restricted in number and scope and, moreover, are relatively obvious in the light of thought upon his immediate business and thus need not be studied as part of a large body of thought upon interaction. (A businessman scarcely needs an economist to tell him, for example, that his oil burners will be in greater demand if the price of fuel oil falls.) This belief in the relative unimportance of economics to the businessman as such probably has much justification; but it casts doubt upon the notion that the relevance of economic prediction (economic theory) to private business economizing creates a strong link between the study of business and that of economics."

If managerial economics and economic forecasting are properly considered fields of business administration rather than of economics, if social reason and morality do not affect the decision-making process in business in any way, if the businessman makes decisions solely in light of private interest, and if the formation of public economic policy in no way affects the management of individual enterprises, Professor Philbrook's second hypothesis would be acceptable. In our judgment, however, none of the foregoing preconditions are fully met for reasons already advanced or to be developed in the subsequent analysis.

It is our contention, to the contrary, that economics is or should be of considerable importance to the businessman; and, since the businessman is a primary center of economic power and decision in our private enterprise economy, economics should find in him a means of affecting a more desirable social development.

Of course, the businessman, as everyone else in our highly materialistic society, should be exposed to economics for the sheer sake of acculturation, that is for the personal satisfaction derived—in silent contemplation or noisy communion with his fellows—from increased insight and understanding of a broad facet of our culture.

There are more pragmatic grounds, however, for recommending economics to the businessman. Probably the most important ground is to provide the businessman with scientific criteria, however partial and inexact, for evaluating public economic policy. The more scientific evaluation of public policy may

not let the businessman see public issues in clear-cut blacks and whites; but his behavior should become more rational in the sphere of public policy, and no inconsiderable amount of his new-found rationality should find expression in more enlightened public policies.

Two questions arise at this juncture. First, is not everyone else, as a citizen-voter, in as great need of economic education as the businessman? All other things equal, an affirmative response is of course indicated. But we believe all other things are not equal. Not only is the businessman generally in a more strategic position to influence public policy as a member of some well-organized business pressure group but also he is usually able to make larger financial contributions to political causes than the average citizen. In addition, he finds continuous use for the analytical tools of economics in the operation of his business.

A second question is whether or not the businessman will permit economic rationality to overcome his special interest? The answer to this question is not easily found. To some extent, fortunately, policy issues may arise in which it is the businessman's economic rationality versus the interests of functional economic groups other than his own. Where his own interests are involved, it may be hoped that the real issue will not be "economic rationality versus private interest" but rather "private interest interpreted in the light of economic rationality versus unenlightened private interest."

#### IV

Another pragmatic ground on which to recommend a solid core of study in economics for the business manager is provided by the use of economics as a technical tool in business administration. Economics now has far more to offer the business manager than an understanding of simple demand and supply relationships, which—as Professor Philbrook indicates—he already firmly grasps. As Professor Paul H. Rigby points out: "Business Administration can be compared to engineering in that it is an applied field which relies for basic theoretical work on other fields. These fields are in the social sciences and would include economics, statistics, mathematics, psychology, anthropology and sociology. . . . Business administration tends like engineering to be interested principally in research which deals with the application of theory to the solution of problems rather than the development of basic theory."<sup>2</sup>

To illustrate, a whole new field in economics, known as managerial economics, has developed in recent years as the result of work by Dean, Oxenfeldt, and Boulding. Professor Ervin K. Zingler states that: "Managerial economics is a study of the practical business application of the basic principles and analytical tools of economic analysis for purposes of formulating sound and tested business policies by business executives. Broad economic concepts and principles concerning demand, cost, supply, price, profit, competition, market classification, and many others are used in developing an economic approach to executive

<sup>2</sup> Paul H. Rigby, "Fact Gathering is Not Research," *Houston Business Review*, May 1957, Vol. 4, p. 5.

decisions on such matters as pricing, costing, profit margins, price differentials, discount policies, advertising and promotional policies, competitive adaption and adjustments to various types of market conditions, situations and practices, market forecasting, the introduction of new products, the dropping of old products, capital budgeting and rationing, and others.

"At a more technical level managerial economics involves an attempt to make such specific economic techniques and tools as statistical supply, demand, and cost curves; the various elasticities of demand such as price, income, advertising, and produce differentiation; and elasticity of substitution quantitatively precise, measurable, and applicable to concrete business problems and situations. This in turn involves various types of research studies such as market studies, national income studies, cost studies, demand studies, and so on."<sup>3</sup>

An older field of economics, business cycles and forecasting, also has much to recommend itself to the businessman, especially in light of his tendency to look farther into the future and to project his company's capital outlays over extended periods of time. Although it may be expecting too much of the businessman to ask him to prepare his own forecasts, he should at least be able critically to evaluate forecasts prepared by staff economists and skillfully adjust the future plans of his business to harmonize with such predictions.

Of course, it could be contended that managerial economics and forecasting should be taught in a department of business administration or management. This indeed raises an administrative problem; but it cannot gainsay the fact that regardless of which department offers the course, the chosen professor must be well-grounded in economics, especially price theory, business cycles and forecasting, and econometrics—as well as having some grasp of business administration. Since a thorough knowledge of economic theory is basic to the application of the tools of theory to the problems of the business firm, it would appear that the course should be taught by an economist in accordance with the traditional principles of academic division of labor; that is, a subject-matter should be taught by a professor of that discipline best qualified by prior training to teach it. Whether his academic title is professor of economics or of business administration is largely a matter of administrative convenience. Some ambiguity, nonetheless, creeps into the distinction between economics and business administration; but why should economics not contribute to the clarification of private managerial policies as well as to public economic policies?

#### V

Having demonstrated, it is hoped, that sound training in economics can be of real importance to the business manager, it is appropriate to ask if cross-fertilization between economics and business administration is recommended procedure for groups other than business managers? Three additional groups apparently would benefit by corollary training in the allied fields. They are

<sup>3</sup> Ervin K. Zingler, "Managerial Economics," *Houston Business Review*, December 1956, Vol. 3, p. 3.

academicians in business administration and economics and professional economist in business and government.

The great twilight zone between economics and business administration lies in the area covered by such courses as corporation finance, money and banking, investments, consumer economics, managerial economics, business cycles and forecasting, labor relations, labor legislation, principles of marketing, transportation, public utilities, government and business, international trade, and similar courses. The broad subject-matter developed within the confines of these courses has been the by-product of expansion of economic theory into applied fields and growth of business administration into a field of professional specialization. Both academic disciplines, therefore, lay legitimate claim to these subjects. Economics stakes its claim on prior appropriation of subject-matter, the strong social interest and public policy content of these courses, the use of economic analysis in the development of their subject-matter, and the need for the development of a well-rounded academic department for economics majors.

Business administration files its claim frequently also on grounds of prior appropriation, the special interest content of the courses, and the integral relationship between each of these courses and the more professional or business-oriented courses that follow in the academic chain of progression in a typical college of business administration. The larger colleges of business administration in the leading state and municipal universities have departments and/or areas of professional specialization in such fields as finance, management, marketing, transportation, foreign trade, real estate, and insurance, among others. Naturally these departments are reluctant to yield the original listing of basic courses in their areas of specialization to economics; for it is in these basic courses that student interest in professional specializations is first stimulated. Jurisdiction over these courses also permits departmental faculties in business administration to be enlarged thereby increasing the academic strength and versatility of the department as a major area of study.

There is no ready answer in many institutions to the conflict of interest arising in the broad twilight zone between economics and business administration. The alternatives are not mutually appealing: (1) the complete capitulation of one academic interest to the other, (2) the development of completely autonomous and self-sufficient empires, and (3) the pragmatic accommodation of rival interests on a basis of the realities of the particular institutional situation.

Very likely, except in the larger and wealthier institutions, the alternatives will be either capitulation or pragmatic accommodation, with the latter alternative appearing as the more preferable. Under a standard of pragmatic accommodation not only would course content be a factor in assigning jurisdiction over courses but also balanced departmental growth, faculty availability, administrative structure, sources of students, need for integration with purely professional courses, curriculum requirements, and so on. Pragmatic solutions frequently will give the appearance of a sell-out of principles, but they will permit co-operation and mutual survival, which are great academic as well as social

virtues. The greatest danger of this approach is that zealots of professional specialization within the larger and faster growing discipline of business administration will demand accommodation at the expense of economics and bend university administrations to their will through sheer force of numbers.

The development of economics and business administration as completely autonomous and self-sufficient empires is a solution that would naturally enhance mutual survival in larger institutions. This autonomy is provided in the British system of higher education with economics being taught in the universities and business administration in the technical schools. But the dichotomy has its disadvantages. In many institutions neither students nor dollars abound sufficiently to afford it. Successful cross-fertilization between the disciplines would tend to be aborted. Economics might prosper as a separate discipline in the larger and wealthier institutions, but the economic content of the business administration curriculum would probably be materially reduced if the applied courses in economics were expunged from the business curriculum and replaced by courses of purely professional content.

Regardless of the merits of the various alternatives, many subjects permeated by public economic policy considerations and the use of economic analysis in subject-matter development are being taught, and will be taught, by academicians who have received their primary training and find their basic interest in business administration. This being the case, it is imperative that faculties in business administration be solidly grounded in the discipline of economics so that they will be ardent and intelligent defenders of the public interest as well as skillful practitioners in the application of the tools of economic analysis to business problems.

Two other groups remain who would benefit by cross-fertilization between the fields of business and economics: academic economists and professional economists in business and government. As the institutional structure grows more complex economic theory tends to become more circumscribed and subject to qualification unless it is continuously revised to reflect such change. The detailed study of the decision-making process in business, as well as in labor and in government, becomes more essential for the economist if he is to maintain the realism of his discipline and keep it in the vanguard of the social sciences. Selective courses in business administration should contribute their fair share to a deeper insight into the institutional structure by the economist.

It goes almost without saying that the professional economist in either business or government should have a firm grasp of the principles and practices of business and public administration. As staff specialists in great hierarchies, they need a thorough understanding of organizational structure, administration, and human relations as well as the unique characteristics and problems of the industries or economic sectors in which they work.

## VI

It is apparent from the preceding analysis, abbreviated as it is, that the relationships, academic and otherwise, between economics and business admin-

istration are indeed complex and only in process of being resolved in a mutually complementary manner. Although each discipline as a body of scientific knowledge will have to be developed for the most part independently of the other as a result of different objectives, together they can offer complementary training to business managers, industrial and governmental economists, and academicians in the respective fields that will enrich the academic background and effective capacity of all concerned. Also, because most institutions of higher education are not sufficiently well endowed, either with students or financial resources, to support independent academic empires in each discipline, there will exist in many institutions of higher learning broad subject-matter areas that will have to be taught to some degree from an interdisciplinary viewpoint and assigned to that department of academic instruction which in light of particular institutional needs will most effectively integrate the conflicting interests involved. To resolve this problem successfully will require a tolerant and pragmatic approach to the academic and administrative problems involved as well as sound interdisciplinary training for those of our colleagues who will shoulder the substantive burden of instruction in the twilight zone.

## BOOK REVIEWS

*Essays in the Theory of Economic Growth.* By Evsey D. Domar. New York: Oxford University Press, 1957. Pp. x, 272. \$4.50.

With one exception, this volume is comprised of reprints of Professor Domar's contributions to the "theory of economic growth" as they have appeared in the leading journals over the past decade. The one exception, "A Soviet Model of Growth," published here for the first time, is a critical exposition of a growth model developed around 1928 by the Soviet economist G. A. Feldman. To anyone interested in abstract growth theory, this volume should serve as a valuable addition to his library, bringing together some of the more important of the scattered writings plus a new essay by one of the contemporary contributors to this branch of economics.

Although economists have long been concerned with problems of economic growth, the development of the *formal* growth models had to await the Keynesian savings-investment analysis. Professor Domar is among the pioneers of the formal models.

The basic purport of the Domar (and Harrod) approach is that we must include growth elements in our macro-economic analysis, and this means that macro-economics must become "dynamic." Briefly, but I hope accurately, Domar's basic thesis reduces to this: With the economy at a full employment equilibrium, both aggregate demand and aggregate supply must grow in a balanced fashion if the equilibrium is to continue. But this only raises the basic issues—for an increment in investment does more than create an increment in income (via the familiar multiplier effect); it also adds to the productive capacity of the total economy. If the full employment equilibrium is to be maintained the increment in income must be, given the propensity to save, sufficiently large to utilize fully the net addition to total productive capacity. Otherwise excess capacity will materialize, as will unemployment, since Domar arbitrarily identifies full employment of the labor force with full utilization of the productive capacity. Since he assumes a constant capital coefficient, this means that income must grow at a constant rate.

Domar's analysis is, of course, much more detailed and thorough than the preceding summary might indicate. Except perhaps for some rather confusing definitions, we have only one basic objection to his analysis. This objection may be developed with reference to one aspect of Domar's analysis, and then in turn expanded to a more general methodological criticism.

Domar defines productive capacity as "... the total output of the economy at what is usually called full employment (with due allowance for frictional and seasonal unemployment), such factors as consumers' preferences, price and wage structures, intensity of competition, and so being given" (p. 87). Yet an integral part of his analysis is that productive capacity changes at a constant rate; it seems highly unlikely, however, that with productive capacity changing, either at a constant or some other rate, consumers' preferences remain un-

changed (viz., new products and product quality changes), that price and wage structures remain constant, and so on. Rather, these elements will be changing along with productive capacity, so much so in fact that the latter becomes extremely difficult to define. Moreover, changes in productive capacity take on a qualitative as well as a quantitative aspect, and this will influence the rate at which productive capacity changes. Nevertheless, Domar sticks to his simplifying assumptions.

In the more general sense, Domar bases most of his analysis on assumed constancies of important variables, e.g., the propensity to save, the multiplier, and, as noted above, the capital coefficient. In the Domar model the economy grows at a constant rate from time period to time period. However, in the real world the variables do not assume constancy, but rather are subject to volatile, often unpredictable, changes. Thus, on these grounds, the usefulness of the analysis for short-run policy purposes may be questioned. Domar, of course, is dealing with long-run relationships, and much of the data indicate that the propensity to consume and the capital coefficient have been relatively constant over the long-run, at least in this country. But policy makers are concerned with the short-run, as well as with the long-run, and at any one time these variables may have values that diverge considerably from their trend lines.

Although I prefer the approach of the less formalistic growth theorist, such as David McCord Wright, to the more rigid, formalistic approach of Domar's this must not be interpreted to mean that I feel that the Domar analysis is sterile. Far from it; for not only has it raised new issues, it has also restated old ones in a refreshing manner. The analysis moreover has also served to refocus attention on economic growth and in this respect is highly welcome. It may be true, as Domar says (p. 34), that he prefers to work on his end of the bridge, and "Professor Wright will probably start from the other end. Perhaps we will meet in the middle some day."

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LOUIS A. DOW

*The Economics of Repressed Inflation.* By H. K. Charlesworth. New York: Macmillan Company, 1956. Pp. 126. \$2.50.

By relying heavily on tools of microeconomic analysis in attacking a macroeconomic problem, *The Economics of Repressed Inflation* marks another step toward overcoming one of the chief limitations of the earlier literature on the subject of inflation.

By way of indirect application, Mr. Charlesworth's book will be good reading for seniors and graduate students of economics, intelligent laymen and economists who are interested in analytical food for thought relating to such questions as: (1) To what extent can direct governmental controls designed to achieve social justice substitute for efficiency in the productive and pricing mechanisms? (2) How can one gain a real appreciation for the controls of the free market system, as contrasted with the more direct controls by the government? (3) What are the consequences of a nation's acting as if it could "have its cake (of price stability) and eat it too?"

More specifically, this book is an attempt to analyze a partially controlled, peacetime economy which is characterized by excessive monetary demand. The emphasis throughout is on the functioning of the "price system in the controlled sector of the economy with respect to income distribution, factor resource allocation and the elasticity of supply and demand schedules." This analysis is developed "by assuming the existence of a free market economy upon which government restrictions and directions in the form of price controls, rationing and allocation have been imposed."

The upshot is that "the combination of inflationary pressures and the controls has economic effects on the price level and in the distribution of resources which may be as serious for the economy as the more widely recognized effects of an uncontrolled inflation." Nevertheless, the book is not designed to condemn the practice of trying to repress inflation, but rather to present its limitations in the hope of minimizing its undesirable consequences.

For an analytical book, this one is fairly easy to read, although knowledge of indifference curve analysis is a prerequisite to the more technical sections. As collateral reading, this book would be helpful not only to students of economic theory and economic stability, but also to those interested in government control.

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JERE W. CLARK

*A Key to Ricardo.* By Oswald St. Clair. New York: Kelley and Millman, 1957.

Pp. xxv, 364. \$6.00.

My first reactions to this book were extremely favorable. It seemed a most handy little compendium, of great use in unlocking a mass of material—and showing *inter alia* a good deal of quiet humour. "For this task," writes Mr. St. Clair, "I felt that I had one qualification not possessed by professional economists, namely a considerable degree of obtuseness; it seemed to me that if I could make Ricardo's meaning perfectly clear to myself, it would necessarily be perfectly clear to the average reader."

One of the most interesting features is a fifteen-page table of contents and summary by Ricardo. It is too bad our hurried lives do not allow for more of this kind of thing. Indeed, I believe that if summaries like this were always required it would serve, beside being valuable in itself, as a most effective method of literary birth control and deliver us from a lot of ill-digested publication.

But while I still think Mr. St. Clair has done a useful work for the person who *already* knows his Ricardo, I have profound misgivings about its *general* use. The trouble is that a green young student will think St. Clair's summaries are Ricardo. And Ricardo, of all people, as Mr. St. Clair points out, must be read completely to be understood.

Mr. St. Clair's brief *precis*, while not bad, are not wholly reliable either. It seems to me he is especially weak on the *dynamic* aspects of Ricardo—those brief *aperçus* where Ricardo looks, for a moment, beyond his abstract models into the new world of industrialism. For example, Mr. St. Clair sums up Ricardo's

Wage Theory as follows: "Sometimes capital increases quicker than population and wages rise; sometimes population increases quicker . . . and wages fall. Progress is by alternate steps. In new countries capital may keep the lead for a long time and wages may remain above the natural rate for years.

"In old countries, however, population constantly tends to outstrip the wages fund. It is only prevented from doing so by the impossibility of rearing all the children that are born."

This is altogether *too* clear. No such clear-cut distinction is to be found in Ricardo's admittedly foggy chapter. The key sentence (not quoted by St. Clair) is: "Their market rate may in an *improving society*, for an indefinite period be constantly above it [the natural rate]" (p. 94, Vol. I, Snaffa's ed.). Also, the natural price "essentially depends on the habits and customs of the people" (p. 97 *ibid.*). And there is the celebrated passage about the friend of humanity wishing to give the "labouring classes" "a taste for the comforts and enjoyments. There cannot be a better security against a superabundant population" (p. 100 *ibid.*). Ricardo says, as I read him, that "improvement" is likely to be more difficult in an old country. I don't think he says it is impossible.

A number of similar over-sharpenings will be found but this example will suffice to indicate my doubts. Mr. St. Clair, however, is to be congratulated for bringing out so clearly (Chapter 10) the tautological nature of Ricardo's statement that if wages rise profits must fall. It will be recalled that Ricardo here means *percentages* of total output—and if total output falls (and absolute wages with it) but the percentage rises, Ricardo would say wages had *risen*, for example in 1929–1934!

Mr. St. Clair, we are told, is an eighty-seven year old insurance specialist. As such the book constitutes no mean feat.

McGill University

DAVID McCORD WRIGHT

*The Labor Policy of the Free Society.* By Sylvester Petro. New York: Ronald Press Company, 1957. Pp. xi, 339. \$5.00.

Mr. Petro gives here a careful survey of the political assumptions, as well as the economic forces, against which one should judge the American labor movement. The first section of the book is devoted to the "The Free Society," the second to "Evolution of Labor Law and Policy in the United States," the third to "A Labor Policy for the United States."

Mr. Petro's book may be viewed as a courageous effort to square the circle. The fundamental dilemma is found in the following passage (p. 13): "Of their societies men ask security, as well as the conditions of maximum freedom and well being. It could not be otherwise for freedom, security and well-being compose a *unitary conception* (italics added), each taking its value from the other, each despised where solitarily enjoyed." Unfortunately a unitary conception is exactly what these three ideas do *not* form. The good society is not one which simultaneously satisfies the desire for freedom, security, and well being, but one which effects a reasonable compromise or *balance* between them. They are, in fact, ends always more or less in conflict with one another. Thus the good

society attempting to meet all three must be in a state of constant dynamic balance or tension, not unitary rest.

Mr. Petro's practice is much better than his theory in this respect and in the remainder of his book he makes a number of very sensible suggestions for effecting some sort of satisfactory dynamic compromise on a policy level. But I wish he had brought out more the inevitable latent conflict of ends which confuses the labor movement. I have in mind the sort of thing attempted in my "Conflicting Standards of Union Action" in my *Impact of the Labor Union*, 2nd ed. (New York: Kelley & Millman 1956). All of Mr. Petro's good sense is wasted upon people who do not understand that you cannot eat your cake and have it too, under socialism, or trade unionism any more than under capitalism. Growth comes through change and causes change in *any* type society and change implies disturbance in *any* type society. There is the problem in a nut shell!

Yet how little do we hear this in some of the places where it should be most stressed. I gave Mr. Petro's book, as an experiment, to a brilliant young major in *industrial relations* in one of our leading universities. Petro had writted (p. 107): "Although there is very little that unions, as such, may do directly in increasing productivity... they can interpret the free society to the workers. They can convince workers that productivity is the key to general welfare." To this the young expert commented: "in other words become propagandists for the people whose own interests are immediately opposed to theirs." I wonder if that young man really wanted secure poverty for the masses—and if he considered that in doing so his interests agreed with those of the worker? Here is the level on which the most work, it seems to me, needs to be done. We can't put across sensible policy until we first put across sensible understanding of the problem. Mr. Petro's book is a courageous effort on both fronts.

McGill University

DAVID MCCORD WRIGHT

*The Politics of Industry.* By Walton Hamilton. New York: Knopf, 1957. Pp. ix, 169. \$3.50.

Competition has had an effective champion in Walton Hamilton. The most important part of this small book is his report on nearly 20 years of effort in enforcement of the antitrust laws, first as a special assistant to the Attorney General of the United States, and later as counsel for plaintiffs in private suits. He itemizes the impediments and frustrations that confront the government or a private plaintiff, and describes the limitations of the judicial process in illuminating an industrial situation and in obtaining a remedy where one is needed. All this may startle many citizens who are comfortably persuaded that the United States has a workable policy for the preservation of competition as an effective force in important sectors of our economy.

The balance of the book is a pointed commentary on many contemporary issues, among them state trade barriers, alleged federal invasion of states' rights to regulate business, conflict-of-interest on the part of businessmen in government, the contemporary role of patents, extension of the "rule of reason,"

alleged contradictions between the Sherman Act and the Robinson-Patman Act, good faith as a complete defense for price discrimination, the role of administrative agencies in policing concerted action to preserve competition, the trend toward treating regulatory agencies as part of the executive establishment, the tendency for regulatory agencies to consume their energies in resolving relatively minor issues, and the success of some regulated industries in placing men of their choice on such commissions, and in hiring away much of their ablest and most energetic personnel.

Dr. Hamilton is well known for his emphasis on the complexity and variety of economic situations, and on the changing character of our industrial culture. In this particular, also, the present volume should be a stimulating experience for students of our government's relations with business.

Washington, D. C.

FRANK J. KOTTKE

*The Investment Decision.* By John R. Meyer and Edwin Kuh. Cambridge: Harvard University Press, 1957. Pp. xv, 284. \$6.00.

This significant study is concerned with an attempt to discover, through empirical testing, the factors which influence business in its decisions to purchase new plant and equipment. The sample used in the study initially included five years of observation, 1946 through 1950, on slightly less than 750 firms in twelve manufacturing industries whose securities were registered with the SEC. In its basic form the sample contained about 3750 observations although this number was reduced materially by the exclusion of many firms because of their accounting peculiarities, mergers and other special experiences, and newly organized firms.

According to the authors, "this investigation has been conducted in two distinct parts: (1) a preliminary study of possible structural relationships which is based entirely on a cross-section analysis of interrelationships and associations between the different variables; and (2) a testing of various structural hypotheses suggested by the preliminary analysis." The variables include such business data as sales, profits, changes in net and gross plant accounts and a number of other significant business ratios. Throughout the study an attempt was made to conduct the investigation upon the basis of industry groups, and the very useful appendix materials reveal not only the specific industry groups employed but also the individual firms included within each group.

While there may be some dispute concerning the process of selecting the data employed, the specific statistical methods used, or the period used for the analysis, it is the considered opinion of this reviewer that the authors did the best possible work with the available data. At every stage in the analysis the results are interpreted with caution and a full realization of the limitations of the specific statistical technique employed. In many ways this study should be a model for all economists who wish to test their theoretical views through empirical methods.

The conclusions are cautiously put forward and will not please the ardent

advocates of any particular brand of investment theory. For example, the authors state that "no one of the principal existing theories of investment was found to be completely adequate or completely inadequate; the explanatory value of each has been critically dependent on numerous 'other variables,' quantifiable and non-quantifiable, which must almost necessarily be assumed as given and thereby eliminated from consideration at the stage of pure deduction. In short, there is a varying amount of empirical truth in each theory but nothing to justify any claim to unique superiority for any one theory above all other alternatives."

For their own part, the authors advocate a residual funds theory of investment which may be explained "within the framework of a modern industrial economy typified by oligopolistic markets, large corporations distinctly separated in management and ownership, and highly imperfect equity and monetary markets."

In addition to this important conclusion the study provides an interesting investigation of the growth and financing pattern of small versus large firms and interesting insights into the influence of factors such as capacity production and corporate liquidity upon the growth of given groups of concerns.

Certainly all thoughtful students of finance as well as growth theorists should read this volume carefully. It is an outstanding attempt to merge modern statistical methodology and the theories of investment.

*University of North Carolina*

JOE S. FLOYD, JR.

*Industrial Tax Exemption in Puerto Rico.* By Milton C. Taylor. Madison, Wis.: University of Wisconsin Press, 1957. Pp. xiv, 172. \$3.50.

Puerto Rico has attracted much attention by her industrial growth and her program of tax exemption. This is a study of the first five years of the tax program (1947-51) to see if tax exemption has been a desirable instrument of public policy in Puerto Rico and whether it might be used profitably to promote industrialization in other underdeveloped countries.

Puerto Rico tax exemption is unique in several respects. It is within the United States tariff area yet the federal income tax does not apply. At the extreme, exemption is complete: no federal or state income tax, no property tax, no municipal licenses or excises, and even dividends and rent paid by exempt firms are non taxable. Within certain designated industries, a new firm may acquire exemption and as soon as that firm begins production all other firms in that industry automatically become exempt. The program is scheduled to expire in 1962.

The author indicates, however, that there are many degrees of exemption and there are many difficult administrative problems in granting and enforcing exemption. Generally the administration and enforcement of the provisions have been poor.

As of June 30, 1952, 242 exempt firms were in operation, about equally divided between new firms and old firms. The author estimates that income tax revenue lost or "foregone" because of the exemption during the first five

years was about \$5.5 million, of which about two millions was on account of old firms. A very large majority of the revenue lost from new firms was on account of a very few firms which had been successful; most of the new firms were small and had only small profits or deficits. Most of the new ventures were in light manufacturing—food, textiles, apparel, chemicals and drugs, fabricated metals, and electrical equipment. An extreme case in which old firms reaped most of the benefits was furniture, in which there were 38 old firms and only five new firms enjoying exemption. Generally the old firms which acquired exemption did not expand their employment or investment.

The author concludes that the program had been effective in attracting capital from the United States but at an inordinate cost, mostly in the form of disguised social costs. The program was costly in loss of revenue, lack of selectivity, a tendency for the program to become permanent and spread to other areas, in difficulty of administration, and in the fact that it frustrates the achievement of a fair distribution of the tax burden. The author thinks that direct subsidies might be preferable to tax exemption and that other underdeveloped countries should use exemption with caution.

At various places the author deplores the fact that exemption from the income tax aids only the successful firms and gives no help to those losing money. He indicates a preference for a system which would tax the successful and subsidize the unsuccessful. This would discourage the efficient while aiding and keeping in operation the inefficient firms. Along the same line he indicates (p. 147) that perhaps the time span of exemption from the income tax is too long, since most firms begin to realize a profit after the first two or three years. If exemption from the income tax is offered only for the early years when most firms ordinarily lose money, it would have no effect in attracting capital. The basic trouble seems to be that the author regards a program of exemption from the income tax and a program of direct subsidies as exact equivalents, whereas in fact they are quite different.

Duke University

B. U. RATCHFORD

*Central Banking After Bagehot.* By R. S. Sayers. London: Oxford University Press, 1957. Pp. 149. \$2.90.

Central banking is comparatively new, having developed in Europe in the fifty years or so before World War I. In our own country it dates from the establishment of the Federal Reserve System in 1913, although, as Mr. Bray Hammond has shown in his *Banks and Politics in America*, the two United States Banks had performed true central banking functions from 1791 until 1833. English central banking is, of course, considerably older. But though its history spans two centuries, "the foundations of modern central banking theory" in England was laid by Walter Bagehot's classic *Lombard Street*.

The techniques of central banking have evolved further since Bagehot's days, and Professor R. S. Sayers' book is concerned with some aspects of the subject. It is not a systematic treatise, however; it is a collection of ten papers, which, taken together, present a rounded and coherent account of the development

of central banking during the first half of the twentieth century, as can be seen from arrangement of the chapters: the theoretical basis of central banking; the development of central banking after Bagehot; British and American experience in the early post-war years; the Bank of England in 1953; open-market operations in English central banking; Bank Rate in the twentieth century; the variation of cash reserve requirements; the determination of the volume of bank deposits: England 1955-6; central banking in underdeveloped countries, and the New York money market through London eyes. All the essays evince scholarship; all are invariably of high quality, and all are written in a graceful and lucid style. The book should attract university teachers, students and practitioners of banking.

Two basic conclusions can be drawn from this study of central banking:

1) "The essence of central banking is discretionary control of the monetary system." And, although discretionary control bears within itself many risks, nevertheless, these inherent weaknesses can be kept within manageable bounds. "Certainly the economic history of this century," writes Professor Sayers, "encourages the view that central bankers can be found to diagnose reasonably accurately, to act quickly, and to maintain for themselves a desirable half-way house between ivory towers and the hurly-burly of the market-place. And as experience in central banking accumulates, it is reasonable to expect that the inherent weaknesses will be kept increasingly under control."

2) Because of their different evolutions, central banks differ everywhere. From this "it follows," says the author, "that there is no code of eternal rules for them to follow. They have to adapt their ways to the shape of the community's constantly changing financial habits. By comparative study we may, of course, hope to find some generalizations about the behaviour of central banks, and the experience of some may offer guarded guidance to others; but we are doomed to disappointment if we look for rules applicable to all times and all places. We have central banks for the very reason that there are no such rules."

Washington, D. C.

ARTHUR LEON HORNIKER

*The New Revolution in the Cotton Economy.* By James H. Street. Chapel Hill, N. C.: University of North Carolina Press, 1957. Pp. xvi, 294. \$5.00.

This book relates to almost unbelievable changes that have taken place in the growing and marketing of American cotton. The author traces in broad outline but with great care the history of cotton growing in the United States through one internal conflict and two World Wars. He examines numerous factors associated with and encouraging the "revolution" as well as those which had a counter effect. He shows that, where just a few years ago there were only a few experimental pickers, today one-fifth of the crop is mechanically harvested; where once there were numerous sharecroppers and much child labor in the cotton fields, today the children are in school and the sharecroppers have gone into other occupations; where once cotton was a high labor crop, improved technology and new cultural practices have greatly increased the output per man hour. In this overall revolution, mechanization is viewed in its proper perspective and the author strikes a responsive chord when he

says that it "is not the cause, but the result of economic change in the area."

The author has divided this work into three parts of four chapters each. Part I explains "Why Cotton Fell Behind." The author blames mainly "institutional factors" and mentions specifically "the plantation system," chattel slavery," and "the credit system." He mentions also the population backflow during periods of depression and competition from foreign production and domestic substitutes.

Part II is entitled "How Mechanization Took Hold." In this section the author explains the nature of the problem, the advances made, and the regional pattern which has developed. In Part III, "The Social Consequences," Dr. Street discusses in successive chapters, "People Leave the Land," "Is There a Labor Shortage?" "Changing Tenure Arrangements," and "A Look to the Future."

The author points out certain economic and social implications that seem to be inherent in the future of cotton. The "Economic Implications" include such considerations as (a) the irreversibility of the process, (b) increased managerial requirements for efficient farming, (c) widening disparity in production methods, (d) price policy and the competitive position of cotton, (e) the effect of the size of the farm units, and (f) the necessity for continued land use adjustments. Under "Social Implications," he expects (a) continued pressure of farm population, (b) a rise in the rural standard of living, and (c) alleviation of many long standing social problems.

Over-all the book is well written and makes a much needed and distinctive contribution to the economic literature about the Cotton Economy in general and the South in particular.

*Clemson Agricultural College*

G. H. AULL AND W. H. FAVER, JR.

*Furniture Marketing: Product, Price and Promotional Policies of Manufacturers.* By Kenneth R. Davis. Chapel Hill: University of North Carolina Press, 1957. Pp. xvi, 224. \$5.00.

This volume is the second in the Studies in Business Administration series published under the direction of the School of Business Administration, The University of North Carolina.

According to the author the objective of this book, which is based on a doctoral dissertation, is to describe and appraise marketing management among household furniture manufacturers. Marketing management is defined as "that activity designed to economically stimulate demand for the firm's productive resources." The basic methods of demand stimulation are categorized as the firm's product, price and promotional policies.

Professor Davis has carried out in a very scholarly manner his purpose of describing and appraising these policies. His presentation is an excellent first effort to study the marketing activities of furniture manufacturers. This volume contains four parts, an index, and a bibliography. At the end of each of the chapters there is an enumerated summary. There are 24 tables and 5 illustrations. The book is divided into four parts.

Part I deals with the industry and its marketing problems. After carefully

defining the subject, the key industry problems are presented. These are expressed as the need for increasing consumer expenditures for furniture and the need for increasing industry profits.

Part II deals with the industry's structure. There is a very brief consideration of the meaning of the concept of industry structure. One chapter is devoted to the structure of supply and another chapter to the structure of demand. Professor Davis finds that there are relatively large numbers of sellers and that there is a relative homogeneity of products which characterize the industry.

Part III deals with the industry's marketing policies. The three chapters in this section analyze the product, price, and promotional policies. The analysis of the promotional policies is the most detailed. Professor Davis concludes that furniture manufacturers have tended to lengthen their product lines to achieve greater market coverage, and that product line changes and product line "mix" represent the major facet of competition. He also concludes that furniture manufacturers have limited pricing freedom which tends to be organized along perfectly competitive lines. The conclusion is reached that the power of manufacturer-directed promotional efforts is limited, and the responsibility for stimulating demand is delegated to the retail dealer.

Part IV is an appraisal of the furniture industry's marketing management policies and practices. A hypothetical program or model is presented of marketing management that would emphasize greater control by furniture manufacturers. Three assumptions implicit in this marketing program are stated: (1) it is possible to establish product differentiation that is amenable to promotion; (2) there exist economies of scale that will permit firms to expand in size more than they have in the past; and (3) quality producers are or can become a significant element in the industry. In analyzing these assumptions, Professor Davis rightfully concludes that the attacks on the marketing policies of furniture manufacturers are not warranted since the industry structure does not permit the furniture marketers to adopt the marketing methods found in other industries.

Furniture industry readers will find much in this book of interest to them. Students will find this little volume an aid in understanding the structure and practices of the industry. Some college professors will be pleased to find a book with all of the attributes of rigid, formal writing.

University of Alabama

HARRY A. LIPSON

*Factors in Effective Administration.* By Charles E. Summers, Jr. New York: Graduate School of Business, Columbia University, 1956. Pp. vii, 286. \$3.25.

This contribution to the growing volume of literature of management has been sponsored by the Academy of Management, a new professional association whose members are for the most part professors of management. It is not surprising that the heart of the study is an analysis of courses in management subjects.

The logic of the study which leads to its title is as follows:

(1) If we discover what a selected group of management professors teach in their courses, we find out what they think effective administration is.

(2) If we find a group of factors into which the thoughts about effective administration of the aforesaid professors can be classified, we derive *Factors in Effective Administration*.

The author has followed the foregoing two steps with considerable success. He gathered his information from over a hundred interviews with professors and deans at twenty leading university schools of business. His report represents a high degree of ingenuity in organizing a diverse group of opinions about the teaching of management subjects. By identifying the three key factors of knowledge, attitude, and ability in what his interviewees imply effective management concerns, the author lends insight to the art of administration.

The knowledge factor includes a conception of the activity of the administrator in matters such as organizing, planning, and directing, in an integrated as well as segregated sense. This factor includes an understanding of organizational behavior, human relations, social responsibilities, economics, and morality. Methods of making decisions are outlined as a combination of knowledge and quantification.

The attitude factor is held to be an aid to effective thinking and action. The capable administrator is supposed to recognize the dignity of his activity, be interested, and have confidence. He should be serious about his development. (One might almost conclude that a serious mien would also be an advantage!) He should recognize the need for accepting a degree of risk in making decisions. He should understand himself and others (human relations) and accept social responsibility.

The ability factor includes skill, art, judgment, and wisdom. Skill lies in using formal knowledge systematically arranged, and art fills in the gaps by insight. Judgment is the ability to consider things that cannot be measured and weighed quantitatively. Wisdom is the ability to validate and select knowledge for a specific problem.

There are useful appendices which include a discussion of case methods of teaching administration, a list of participating universities and personnel, and many of the detailed interviews.

Perhaps the most noticeable weakness of the book is that the writing is irritatingly vague in spots. Doubtless there are problems in language meanings in writing such a book. The author himself warns on page 119 that all people have semantic preferences. However, there seems to be little light in such expressions as this one found on page 120: "[Guiding and efficiency—technological-human-social organization toward a group of goals involves:] a . . . b. . . . c. when time pressure for action dictates that the structural and action phases merge into one, responding to the administrative environment or problem with attitudes and abilities that influence the environment or problem in the direction of highest goals." Lesser distractions are the lapses in proofreading or writing that account for a number of grammatical errors. Also, the phrase "in terms of" is often used when more precise writing would have been more appropriate.

To summarize, this book is not easy reading. The approach, with its many cross-references, is academic. Nevertheless, for the diligent reader it is a book

that is stimulating. Even able business administrators should find the book helpful if they would take the time to wade through it. To professors and deans concerned with the field of management the book is a worthy reference.

*University of Virginia*

CHARLES L. QUITTMEYER

*Commercial Fisheries of North Carolina: An Economic Analysis.* By George M. Woodward. Chapel Hill, N. C.: Bureau of Business Services and Research, School of Business Administration, University of North Carolina, 1956. Pp. ix, 153. Paper, \$2.00.

This is a report on research which, according to the author, has the following objectives:

"(1) Definitely to measure and assess the importance of commercial fishing in North Carolina.

"(2) To determine the rates of growth of the fisheries and the economic factors affecting these rates.

"(3) To discover what economic advantages and disadvantages North Carolina has in the production of the products of the seas."

The research on which this report is based is a continuation of a program initiated by the University of North Carolina in 1947 with the establishment of the Institute of Fisheries Research. An antecedent report to this one was prepared by Harden F. Taylor and a staff of associates in 1951. Taylor's study was significant in that it was a pioneer work in the economics of commercial fisheries. He gave special attention to the relative effects of economic and biological forces on the supply of fishery products. The present study utilizes much of the groundwork laid by Taylor but gives greater attention to the factors influencing the demand for North Carolina's fishery products and to the role of economic forces in limiting activity within the industry given the conditions of demand and supply.

The report is divided into five parts. Part one sets out the purpose and methods of the study and gives a general description of the growth and characteristics of the commercial fisheries. The remaining four parts examine respectively North Carolina's finfisheries, oyster fisheries, and shrimp fisheries, and the processing of fishery products in North Carolina.

The analysis is strictly economic and the author is to be commended for the effective way in which the facts are presented and analyzed. The analytical frame of reference is clearly set forth and the conclusions are well supported. This report should be highly useful for those concerned with the future of North Carolina's commercial fisheries.

*University of Florida*

CARTER C. OSTERBIND

## NOTES

### DEATH

V. V. Sweeney, professor of insurance and acting head of the Department of Business Organization and Operation, University of Florida, died on July 18, 1957.

### APPOINTMENTS AND RESIGNATIONS

Burwin C. Alread, associate professor of business and economics, is on leave from Hendrix College (Arkansas) to complete residence work for the Ph. D. at the University of Missouri.

Lewis N. Amis has been appointed an instructor in the College of Business Administration, University of Arkansas.

J. L. Athearn, formerly of Ohio State University, has been appointed associate professor of insurance at the University of Florida.

G. H. Aull, head of the Department of Agricultural Economics and Rural Sociology, Clemson College, appeared on a panel last December to discuss farm policy before a joint congressional committee on agriculture.

A. E. Bachman has been appointed assistant professor of management at the University of Miami School of Business.

Wesley E. Ballsrud has been appointed assistant professor of business statistics at the University of Missouri.

Warren E. Banks has been appointed an instructor in the College of Business Administration, University of Arkansas.

Gilbert Banner has been appointed assistant professor of economics at the University of Tennessee.

Carlisle W. Beskin, who received his doctorate in economics at the University of Virginia last June, has been promoted to professor of economics and chairman of the Department of Economics at Randolph-Macon College.

Robert W. Bell has been appointed assistant professor of marketing in the College of Business Administration, University of Arkansas.

Sidney C. Bell has resigned as instructor and assistant in agricultural economics at the Alabama Polytechnic Institute to continue his graduate work at Michigan State University.

James H. Blackman is on leave during 1957-58 from the School of Business Administration, University of South Carolina, to direct a study on the Soviet economy at the University of North Carolina under the auspices of the U. S. Air Force. He was awarded a Carnegie Grant to travel in Russia in late summer, 1957.

J. H. Brashear, formerly chairman of the Department of Economics at Elon College, is now at the Woman's College of the University of North Carolina as lecturer in economics.

Robert W. Breeden has accepted a position as lecturer in economics at Loyola University of the South.

Horace T. Breland has joined the staff in business administration at Belmont College.

Charles M. Bridges, Jr., has been appointed instructor in statistics at the University of Tennessee.

Thomas Brock has been appointed instructor in marketing at Mississippi Southern College.

Richard S. Brooks has resigned as associate professor of economics and business at Delta State College to accept a position at Central Michigan College.

James R. Brown has been appointed research associate in the Bureau of Business Research at the University of Alabama.

William M. Brown has been appointed assistant professor of marketing in the College of Business Administration, University of Texas.

Robert L. Bunting has returned to his teaching duties as assistant professor of economics at the University of North Carolina after having been on leave during the spring semester of 1957.

J. D. Butterworth has been appointed interim head of the Department of Marketing of the College of Business Administration of the University of Florida.

John Bynon is lecturer in economics at the University of Tennessee.

Jack K. Byrd is teaching business administration at Belmont College.

James A. Byrd has been appointed assistant professor of finance in the College of Business Administration, University of Texas.

Vincent Cangelosi has been promoted to assistant professor of general business in the College of Business Administration, University of Arkansas.

T. G. Carpenter has been appointed instructor of economics at the University of Florida.

Buford Casey has been appointed assistant professor of marketing in the College of Business Administration, University of Texas.

Troy J. Cauley, of Indiana University, was a visiting associate professor of economics at the University of Texas during the 1957 summer session.

William T. Clark has joined the staff of the Department of Economics and Business Administration at Alabama Polytechnic Institute as an instructor in geography.

Edwin K. Clickner, formerly of Washington, D. C., has joined the Economics Department at Presbyterian College.

R. S. Cline, associate professor of insurance, has been appointed assistant dean of the College of Business Administration, University of Florida.

Herman Colvin has been appointed associate professor of business law at Mississippi State College.

Lawrence R. Conwill has been promoted to assistant professor of business at Delta State College.

Leon P. Cook, Jr., formerly of the University of Alabama, has been added to the School of Business Administration, Wake Forest College, as associate professor of accounting.

A. J. Cooper has been promoted to assistant professor of industrial management, Georgia Institute of Technology.

Lewis Copeland has been promoted to associate professor of statistics at the University of Tennessee.

Albert L. Craven, Jr., formerly senior accountant with Arthur Andersen and Company, has been appointed assistant professor of business administration at Mississippi College.

Clyde J. Crobaugh has resigned as head and professor of finance at the University of Tennessee.

William Cross has been appointed assistant professor of accounting at Mississippi State College.

Harvey Cummings has been appointed lecturer in accounting at the University of Tennessee.

Lillian Cundeff has been promoted to assistant professor of accounting at Southern State College (Arkansas).

Joseph Curry has been promoted to associate professor of accounting at Mississippi State College.

John Darr has been appointed professor and head of the Department of Management at Mississippi State College.

Elise Davis has been promoted to professor of business education at the University of Tennessee.

James N. Davis, returned from a leave of absence doing graduate work at the University of Arkansas, has been promoted to associate professor of economics at Harding College (Arkansas).

John Anderson Davis has been appointed associate professor of economics at Mississippi State College.

Frances DeLouche has accepted a position in the Business Administration School at Northeast State College (Louisiana).

Frank T. de Vyver has been named chairman of the Department of Economics and Business Administration at Duke University.

J. Stuart Devlin, Jr., has joined the faculty of Guilford College as assistant professor of economics and business administration.

Robert L. Dickens has been promoted to associate professor of accounting at Duke University.

Louis A. Dow, professor of economics at the University of Oklahoma, has accepted the post of Oklahoma correspondent for the Southern Economic Journal.

Harold Dulan, College of Business Administration, University of Arkansas, was elected president and chairman of the Board of the Participating Annuity Life Insurance Company, the first company to issue a variable annuity insurance policy to the general public.

James Edmondson, head of the Division of Business Administration at Ouachita Baptist College (Arkansas) has been appointed vice-president of the college.

Carlisle Ellis is now teaching business education at Arkansas State Teachers College.

Vernon L. Engberg has been granted a leave of absence from the University of Houston during the 1957-58 year in order to complete the work on his doc-

torate at the University of Texas. He will also serve as a lecturer in transportation in the College of Business Administration, University of Texas, during this period.

W. J. Feuerlein, who served as visiting professor at the University of Florida, 1956-57, has accepted a position as consulting economist with the Ralph M. Parsons Company of Los Angeles on a project in Pakistan.

Jesse C. Fisher has been appointed part-time instructor in economics at the University of North Carolina.

Charles Fleming, Jr., has been appointed associate professor of business administration at Southern Missionary College.

Edward H. Flynn has been appointed assistant professor of finance at the University of Tennessee.

Ben Forbes has been promoted to associate professor and head of the Department of Accounting at Mississippi Southern College.

A. L. Geisenheimer, professor of economics, University of South Carolina, retired in June, 1957.

F. E. Gillis of the economics faculty of Purdue University taught economics at Millsaps College during the 1957 summer session.

Robert L. Glover has resigned as assistant in agricultural economics at the Alabama Polytechnic Institute to continue his graduate work at Vanderbilt University.

Louise Godlove has been appointed assistant professor of business at Delta State College.

Gena Gowin, from Oklahoma State University, is now teaching secretarial training at Arkansas Polytechnic College.

D. H. Granbois, formerly of the University of Illinois, has been appointed instructor of marketing at the University of Florida.

Jean Mathieson Gray, formerly instructor in economics at the Woman's College of the University of North Carolina, resigned in June 1957 to enter graduate school at the University of California.

Dennis P. Hale has been appointed to the accounting staff in the Department of Economics and Business Administration at Alabama Polytechnic Institute.

Ivan Hall has been appointed an instructor in the College of Business Administration, University of Arkansas.

John Hall, formerly on the staff at East Central State College (Oklahoma), has returned to the University of Texas to complete his doctoral work.

William C. Hall is serving as part-time instructor in accounting at the University of North Carolina.

James Harrington, Jr., formerly with Southern Methodist University, has been appointed assistant professor of business administration at the College of Business Administration, University of Georgia.

Calvin Harris has been appointed temporary instructor of secretarial administration at the University of Alabama.

Robert D. Hay, chairman of the Department of Management, College of Business Administration, University of Arkansas, participated in the faculty

seminar, "New Developments in Business Administration," held at Williams College August 4-30. It was conducted by the Graduate School of Industrial Administration, Carnegie Institute of Technology, sponsored by the Ford Foundation.

Rolf Hayn is on leave of absence from the University of Oklahoma to serve in the Office of Economic and Financial Research, Department of the Treasury, Commonwealth of Puerto Rico, San Juan, Puerto Rico.

O. E. Heskin, who has been with the U. S. State Department in Egypt for the past two years, has returned to his position as professor of economics at the University of Florida.

M. L. Higgins has accepted an appointment as instructor of business administration at Oklahoma City University.

Abraham Hirsch, associate professor of economics at the College of William and Mary, has been granted a further leave of absence for 1957-1958 to teach at Robert College in Istanbul, Turkey.

Robert Hoeke has been appointed instructor in industrial management at the University of Tennessee.

Ralph M. Hogan has been appointed lecturer in business statistics at the University of Missouri.

James D. J. Holmes has been appointed assistant professor of accounting at the University of Mississippi.

James E. Holstein has been appointed assistant professor of business statistics at the University of Missouri.

Calvin B. Hoover has resigned as chairman of the Department of Economics and Business Administration of Duke University in order to concentrate on teaching and research work. He will be on sabbatical leave for the academic year 1957-58.

Robert Howell has been appointed professor of business administration at Mississippi State College.

Paul F. Huddleston has been appointed instructor of management at the University of Alabama.

Don D. Humphrey, a member of the Department of Economics and Business Administration at Duke University, will be on sabbatical leave for the fall semester of 1957.

Robert S. Hutchison has been promoted to associate director of the Bureau of Business Research at the University of Tennessee.

Alice Joyner Irby has joined the staff of the Woman's College of the University of North Carolina as teaching assistant in economics.

R. B. Jennings has been appointed interim instructor of business law at the University of Florida.

Harold L. Johnson, formerly associate professor of economics at the Georgia State College of Business Administration, is now associate professor of economics at the School of Business Administration, Emory University.

Margaret Johnson has been appointed an instructor in the College of Business Administration, University of Arkansas.

William Elbert Jones became an instructor in accounting in the School of Business Administration, University of South Carolina, after receiving his master's degree at the end of the summer, 1957 session.

Marvin B. Kaufman has been appointed instructor in business statistics at the University of Missouri.

E. Leon Kearney, assistant professor of secretarial science at Harding College (Arkansas), resigned to accept an appointment at Saint John's College at Winfield, Kansas.

Albert S. Keister, formerly professor of economics at the Woman's College of the University of North Carolina, entered retirement in June, 1957.

Thomas Kemmerlin, Jr., joined the faculty of the School of Business Administration, University of South Carolina, in September, 1957 as an instructor in commercial law.

Robert E. Kendrick, associate professor of business administration at David Lipscomb College, is taking a year's leave of absence for further study at Yale University.

Robert A. Kennedy has been appointed assistant professor of finance at the College of Business Administration, University of Arkansas.

Robert Leroy King, formerly at Michigan State University, has been appointed assistant professor of marketing in the School of Business Administration, University of South Carolina.

Harold E. Klontz, of the Department of Economics and Business Administration at Alabama Polytechnic Institute, served as statistical consultant to the Army at its ordinance plant in Texarkana, Arkansas during the last summer.

Frank H. Knight, professor of economics at the University of Chicago, will serve as distinguished visiting scholar at the Thomas Jefferson Center for Studies in Political Economy at the University of Virginia from January through June 1958.

M. L. Korn has been appointed to the faculty of Northern Oklahoma Junior College.

Adamantia P. Koslin has accepted a position as visiting assistant professor of economics at the University of Oklahoma for 1957-58.

Clifton H. Kreps, Jr., has returned to his position as Wachovia associate professor of banking at the University of North Carolina following a leave of absence during the spring semester of 1957.

Juanita M. Kreps has been appointed visiting assistant professor of economics at Duke University.

Raymond W. Lansford has been appointed associate professor of marketing at the University of Missouri.

H. Alan Lasater has been appointed instructor in statistics at the University of Tennessee.

Paul G. LaGrone has been appointed associate professor of accounting at the College of Business Administration, University of Arkansas.

Leon F. Lee has resigned his position at the University of Oklahoma to accept an appointment as assistant professor of economics at San Jose State College.

Gary LeGros is a lecturer in economics at Loyola University of the South.

Fern Lowman has received an appointment as associate professor of economics at Southwestern State College (Oklahoma).

Joseph L. McAuliff has resigned from the staff at Oklahoma City University to accept an appointment with the Bureau of Business Research, University of Arkansas.

Phillip D. McCoury has resigned as assistant professor of economics at the University of Tennessee and has joined the staff of Humboldt State College.

William McLaughlin has been appointed an instructor in the College of Business Administration, University of Arkansas.

James H. McLean has been appointed associate professor of accounting at the University of Tennessee.

H. C. McLellan, formerly assistant agronomist at Clemson College, has become assistant agricultural economist at Clemson.

N. S. Mackie, Jr., has been appointed assistant professor of management at the University of Miami School of Business.

C. A. Matthews has been appointed interim head of the Department of Finance and Insurance, College of Business Administration, University of Florida.

William David Maxwell, on leave during 1957-58 from the Department of Economics, University of South Carolina, is on a Fellowship Grant at The Johns Hopkins University to complete work for his doctorate.

Frederic Meyers, associate professor of economics at the University of Texas, has returned to his position after a year's leave of absence spent in research in Europe and a semester's teaching at the University College of South Wales and Monmouthshire.

Raymond F. Mikesell has resigned at the University of Virginia and has accepted an appointment as Miner professor of economics at the University of Oregon.

James F. Miles, associate agricultural economist at Clemson College, has been named chairman of the Board of Trustees of the Opportunity School in West Columbia.

Charles R. Milton has been promoted to lecturer in business administration at the University of North Carolina.

John E. Morgan, Jr., has been appointed instructor in industrial management in the School of Industrial Management, Georgia Institute of Technology.

James A. Morris, on leave during 1956-57 to work with the International Cooperation Association in Ankara, Turkey, has returned to the School of Business Administration, University of South Carolina.

Roland T. Mullins has been appointed an instructor in the College of Business Administration, University of Arkansas.

John C. Murdock, professor of economics at the University of Missouri, has been appointed Missouri correspondent for the Southern Economic Journal.

Henry Nash has been appointed associate professor of business administration at Mississippi State College.

Warren Nation has been promoted to professor of marketing and head of the Department of Marketing at Mississippi Southern College.

Kalo E. Neidert has resigned as assistant professor of accountancy at the University of Mississippi to accept a position at the University of Texas.

R. W. Niemela, formerly of Massachusetts Institute of Technology, has been appointed assistant professor of management, University of Florida.

Hugh S. Norton has been appointed associate professor of transportation at the University of Tennessee.

R. P. Ochs has been appointed instructor in the Department of Business Education at the University of Miami School of Business.

Bernard M. Olsen has been promoted to associate professor of economics at North Carolina State College.

Donald Orey has been appointed instructor in business administration at the University of Missouri.

Robert W. Paterson of the University of South Carolina has been selected study director of the South Carolina legislature's corporate income tax study committee.

Burke A. Parsons has been granted a year's leave of absence by the Texas College of Arts and Industries for the purpose of completing work on his doctorate in economics at the University of Texas.

Albert W. Patrick has been appointed professor of accounting at the University of Tennessee.

Guy Peden has been appointed an instructor in the College of Business Administration, University of Arkansas.

Murray E. Polakoff has been promoted to associate professor of economics at the University of Texas.

Forrest H. Pollard has joined the School of Business Administration at Tennessee Polytechnic Institute.

Trezzie Pressley, formerly at East Texas State Teachers College, has been appointed instructor in general business at Arkansas Polytechnic College.

Olin S. Pugh, assistant professor of economics at the University of South Carolina, was selected assistant staff director of the South Carolina legislature's corporate income tax study committee. Also he was awarded the doctor's degree by Duke University in June, 1957.

Ben Puyper has been appointed instructor in accounting at Mississippi Southern College.

Phillip C. Ransdell is serving as part-time instructor in accounting at the University of North Carolina.

E. H. Rayson has been appointed lecturer in economics at the University of Tennessee.

J. P. Reed, formerly of New Orleans, has joined the economics faculty at Clemson College as assistant professor.

George N. Reynolds has joined the staff of the Department of Economics and Business Administration of Alabama Polytechnic Institute as instructor.

Jess L. Rhodes has been appointed an instructor in the College of Business Administration, University of Arkansas.

Norman H. Ringstrom has resigned his position at Loyola University of the

South to accept a position in marketing at Oklahoma Agricultural and Mechanical College.

Clara Robb has been appointed an instructor in the College of Business Administration, University of Arkansas.

Robert A. Robertson has been appointed assistant professor of economics at the College of Business Administration, University of Arkansas.

D. M. Robinson has been appointed assistant professor of management at the College of Business Administration, University of Arkansas.

D. F. Ross, associate professor of economics at Florida State University, attended the Caribbean Economic Development Conference in Kingston, Jamaica, in August.

John B. Ross has been appointed associate professor of accounting at the University of Tennessee.

Richard Samuels is teaching general business at Southern State College (Arkansas).

Warren J. Samuels has been appointed assistant professor of economics at the University of Missouri.

Lloyd Saville has been promoted to professor of economics and named director of undergraduate studies in the Department of Economics and Business Administration at Duke University.

James R. Schlesinger, professor of economics at the University of Virginia, is on leave during the first semester of 1957-58 to lecture at the Naval War College.

Martin Schnitzer has been promoted to assistant professor of economics at the College of Business Administration, University of Arkansas.

Robert P. Sharkey has been appointed assistant professor of economics at the University of South Carolina.

Karl W. Sharp has resigned as assistant professor of accounting at the University of Tennessee to teach at West Texas State College.

Frances E. Shults, from New York University, is now teaching accounting at Arkansas Polytechnic College.

Barbara Simpson, acting instructor in economics at the College of William and Mary, has accepted further appointment for the year 1957-1958.

Jerry Simpson has accepted an appointment as visiting instructor of economics for the year 1957-58 at the University of Oklahoma.

G. R. Sims, who was formerly associated with Chandler & Rudd Company, Cleveland, Ohio, has been appointed assistant professor of marketing, University of Florida.

Ralph E. Skelly has been appointed assistant professor of accounting at the University of Missouri.

Eugene Smith has been appointed to teach business law at David Lipscomb College.

Eva L. Smith has accepted an appointment as instructor in secretarial administration at Oklahoma City University.

S. D. Southworth was appointed chairman of the Department of Economics at the College of William and Mary beginning with the 1956-1957 session.

Clarence A. Spencer, Jr., has been appointed instructor in finance at the University of Alabama.

John H. D. Spencer has been appointed associate professor of management at Mississippi State College.

E. H. Stapleton has resigned his position at Northeast Louisiana State College.

H. Ellsworth Steele, research professor in economics at Alabama Polytechnic Institute, made a study of the managerial policies at the Penn Salt Corporation in Philadelphia during August and September.

R. R. Sterling, formerly of the University of Denver, has been appointed instructor of accounting at the University of Florida.

David H. Stone has joined the economics staff of Belmont College.

R. M. Strahl has resigned as professor of marketing at the University of Tennessee to become head and professor of marketing at Kent State University.

Albion G. Taylor has relinquished the chairmanship of the Department of Economics at the College of William and Mary. He is continuing his teaching duties.

Charles W. Taylor has been appointed assistant professor of accountancy at the University of Mississippi.

Lloyd Taylor has been appointed an instructor in the College of Business Administration, University of Arkansas.

Margaret Teague, formerly of Abilene Christian College, has been appointed an instructor in business education at Harding College (Arkansas).

P. C. Teichert, formerly of Michigan State University, has been appointed professor of economics at the University of Mississippi.

Charles Thigpen has resigned as instructor of statistics at the University of Tennessee.

Ermal H. Tucker, formerly of Kansas City College of Commerce, has been appointed instructor in secretarial science at Harding College (Arkansas).

Bernard Udis has resigned as assistant professor of economics at the University of Tennessee to join the staff at the University of Pittsburgh.

Lee Carlton Underwood, formerly of Columbia University, has been appointed assistant professor of business administration at Harding College (Arkansas).

Eugene Upshaw has been appointed assistant dean, College of Business Administration, The University of Tennessee.

Vern H. Vincent has resigned as professor of accounting at the University of Tennessee to become professor of accounting at the University of West Virginia.

James Muir Waller, formerly with the University of North Carolina, has been appointed assistant professor of economics at the University of Georgia.

Nolan Waller has been appointed research associate in the Bureau of Business Research at the University of Mississippi.

Thurston B. Walls, formerly of Mississippi State College, has been appointed associate professor of economics and business administration at Millsaps College.

Hilda C. Wasson has been appointed associate professor of marketing at the University of Tennessee.

Martin Wehling has been appointed assistant professor of business administration at Mississippi Southern College.

Irwin Weinstock has been appointed an instructor in the College of Business Administration, University of Arkansas.

Molly Jane Welborn has been appointed instructor in commerce at Mississippi Southern College.

R. H. West has been appointed assistant professor of management in the College of Business Administration, University of Arkansas.

Bartin Westerlund, formerly of the University of Miami, has been appointed assistant professor of marketing in the College of Business Administration, University of Arkansas.

R. E. Westmeyer, chairman of Department of General Business, College of Business Administration, University of Arkansas, participated in the summer pipe-line tour sponsored by the Committee for Oil Pipe Lines. He also was one of the speakers at the fourth annual seminar of the American Society of Traffic and Transportation held in September at Atlanta, Georgia.

D. A. Wiesner has been appointed instructor in the Department of Business Law at the University of Miami School of Business.

Don Julian Williams has been appointed instructor in accounting at Mississippi State College.

Frank J. Williams, associate professor of statistics at the University of Tennessee, is on leave of absence to pursue studies at Stanford University.

Wendell Neil Williams, formerly with the University of Arizona, has been appointed assistant professor of business administration at the College of Business Administration, University of Georgia.

M. V. Wilmot, Jr., formerly of the University of Wisconsin, has been appointed assistant professor of finance, University of Florida.

Henry Wilson has been appointed associate professor of management at Mississippi State College.

Glen Wing has been promoted to associate professor of general business in the College of Business Administration, University of Arkansas.

George M. Woodward has been appointed part-time instructor in economics at the University of North Carolina.

#### NEW MEMBERS

The following names have been added to the membership of the Southern Economic Association:

Robert A. Ford, Southwestern Louisiana Institute, Lafayette, La.

William J. Frazer, Jr., University of Florida, Gainesville, Fla.

George Guy, 404 Junquera Street, Cebu City, Philippines.

Joe S. Hanes, 344 Lamont Drive, Decatur, Ga.

Vivian W. Henderson, Fisk University, Nashville, Tenn.

Randolph C. Kinabrew, University of Mississippi, University, Miss.

Charles A. Larson, Edison Electric Institute, New York, N. Y.

Charles T. Moore, Indiana University, Bloomington, Ind.

Robert B. Pettengill, Rollins College, Winter Park, Fla.

Eric Schenker, Michigan State University, East Lansing, Mich.

Henry Thomassen, Prudential Insurance Company, Newark, N. J.

## BOOKS RECEIVED

- Aspectos Monetarios de las Economías Latinoamericanas*. Mexico, D. F.: Centro de Estudios Monetarios Latinoamericanos, 1957. Pp. 7, 211.
- Bauer, P. T. *Economic Analysis and Policy in Underdeveloped Countries*. Durham: Duke University Press, 1957. Pp. vi, 145. \$3.00.
- Bauer, P. T. and Yamey, B. S. *The Economics of Under-Developed Countries*. London: James Nisbet & Co., 1957. Pp. v, 271. 10/6.
- Bowlby, Sylvia M. *An Economic Survey of Denton County, Texas*. Rev. ed. Austin, Texas: Bureau of Business Research, University of Texas, 1957. Pp. ii, F-10. Paper, \$2.00.
- Clark, Colin. *The Conditions of Economic Progress*. 3rd ed. New York: St. Martin's Press, 1957. Pp. v, 720. \$12.50.
- Committee on Money and Banking. *Money and Banking*. New York: Pitman Publishing Corporation, 1957. Pp. v, 588. \$6.00.
- Commons, John R. *Legal Foundations of Capitalism*. Madison: University of Wisconsin Press, 1957. Pp. viii, 394. Paper, \$1.95.
- Crosser, Paul K. *Economic Fictions: A Critique of Subjectivistic Economic Theory*. New York: Philosophical Library, 1957. Pp. ix, 322. \$4.75.
- Dodd, James Harvey and Hasek, Carl W. *Economics: Principles and Applications*. 3rd ed. Cincinnati: South-Western Publishing Company, 1957. Pp. v, 817. \$6.00.
- Doster, James F. *Railroads in Alabama Politics, 1875-1914*. University, Ala.: University of Alabama Press, 1957. Pp. vi, 273. \$5.00.
- Downs, Anthony. *An Economic Theory of Democracy*. New York: Harper & Brothers, 1957. Pp. 3, 310. \$4.50.
- Fuchs, Victor. *The Economics of the Fur Industry*. New York: Columbia University Press, 1957. Pp. 4, 168. \$5.00.
- Glaeser, Martin G. *Public Utilities in American Capitalism*. New York: Macmillan Company, 1957. Pp. vii, 624. \$7.50.
- Gordon, Margaret S. and Amerson, Ralph W. *Unemployment Insurance*. Berkeley: University of California Institute of Industrial Relations, 1957. Pp. v, 87. Paper, 50¢.
- Hammond, Bray. *Banks and Politics in America*. Princeton, N. J.: Princeton University Press, 1957. Pp. vii, 771. \$12.50.
- Harris, Seymour E. *International and Interregional Economics*. New York: McGraw-Hill Book Company, 1957. Pp. vii, 564. \$7.00.
- Heath, Spencer. *Citadel, Market and Altar*. Baltimore: Science of Society Foundation, 1957. Pp. vi, 259. \$6.00.
- Hirsh, Werner Z. *Introduction to Modern Statistics*. New York: Macmillan Company, 1957. Pp. vii, 429. \$6.50.
- Khan, Mohd. Shabbir. *Schumpeter's Theory of Capitalist Development*. Aligarh, India: Muslim University, 1957. Pp. viii, 175.
- Kitaoka, Juitsu. *Over-Population and Family Planning in Japan*. Tokyo, Japan: Science Council of Japan, Division of Economics & Commerce, 1957. Pp. 71.

- Kohr, Leopold. *The Breakdown of Nations*. New York: Rinehart & Co., 1957. Pp. v, 244. \$6.00.
- Koopmans, Tjalling C. *Three Essays on the State of Economic Science*. New York: McGraw-Hill Book Company, 1957. Pp. vii, 231. \$6.50.
- Leibenstein, Harvey. *Economic Backwardness and Economic Growth*. New York: John Wiley & Sons, 1957. Pp. vii, 295. \$6.75.
- Lunt, Dudley C. *The Farmers Bank, 1807-1957*. Dover, Delaware: Farmers Bank of the State of Delaware, 1957. Pp. 1,308. \$10.00.
- MacDougall, Donald. *The World Dollar Problem*. New York: St. Martin's Press, 1957. Pp. v, 622. \$12.50.
- Makower, Helen. *Activity Analysis and the Theory of Economic Equilibrium*. New York: St. Martin's Press, 1957. Pp. v, 192. \$5.75.
- Noble, Howard S. and Niswonger, Rollin. *Accounting Principles*. 7th ed. Cincinnati: South-Western Publishing Company, 1957. Pp. iii, 742. \$6.00.
- Oliver, Henry M., Jr. *Economic Opinion and Policy in Ceylon*. Durham, N. C.: Duke University Press, 1957. Pp. vi, 145. \$3.50.
- Patterson, Edwin W. *Essentials of Insurance Law*. 2nd ed. New York: McGraw-Hill Book Company, 1957. Pp. vii, 558. \$7.50.
- Productivity, Prices and Incomes*. Materials prepared for the Joint Economic Committee Staff. Washington: Government Printing Office, 1957. Pp. iii, 281.
- Ramsay, G. D. *English Overseas Trade During the Centuries of Emergence*. New York: St. Martin's Press, 1957. Pp. vii, 279. \$6.00.
- Reder, Melvin W. *Labor in a Growing Economy*. New York: John Wiley & Sons, 1957. Pp. vii, 534. \$6.50.
- Rose, T. G. and Farr, Donald E. *Higher Management Control*. New York: McGraw-Hill Book Company, 1957. Pp. v, 290. \$6.50.
- Sackrin, Seymour M. and Conover, Arthur G. *Tobacco Smoking in the United States in Relation to Income*. Washington, D. C.: U. S. Department of Agriculture, 1957. Pp. ii, 212. Paper, \$1.00.
- Sayers, R. S. *Central Banking After Bagehot*. New York: Oxford University Press, 1957. Pp. 1,149. \$2.90.
- Seammell, W. M. *International Monetary Policy*. New York: St. Martin's Press, 1957. Pp. 3,402. \$9.00.
- Sen, S. R. *The Economics of Sir James Steuart*. Cambridge: Harvard University Press, 1957. Pp. v, 207. \$5.00.
- Tostlebe, Alvin S. *Capital in Agriculture: Its Formation and Financing Since 1870*. Princeton: Princeton University Press, 1957. Pp. ix, 232. \$6.00.
- Wilson, J. S. G. *French Banking Structure and Credit Policy*. Cambridge: Harvard University Press, 1957. Pp. v, 453. \$8.50.
- Wriston, Henry M. *Diplomacy in a Democracy*. New York: Harper & Brothers, 1956. Pp. 3,115. \$2.50.

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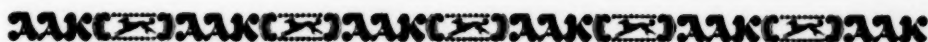
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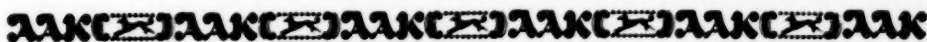
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